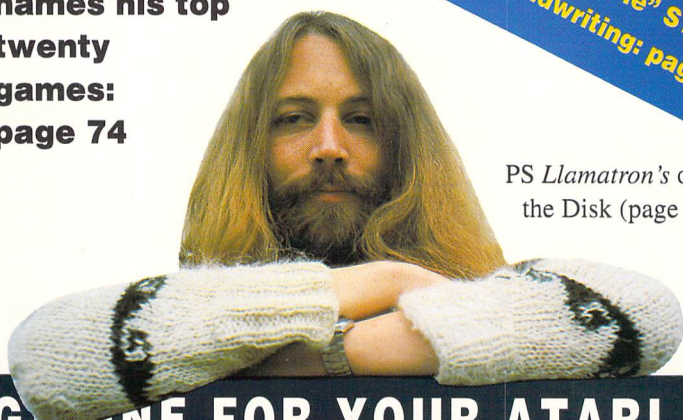


ST FORMAT

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SCOOP!
Atari's chief designer tells all about the "miracle" ST that reads your handwriting: page 25



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BRITAIN'S BEST-SELLING MAGAZINE FOR YOUR ATARI ST



You can do this:
MidWinter 2 artist Andy Elkerton shows you how – see page 90

Shoot to thrill!

Your ST, a video recorder and imagination – all you need to create video masterpieces: page 30

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Make your very own video blockbuster with our Cover Disk programs: page 38

Introduce your ST to the real world! We pick the best digitiser around: page 104



ST FORMAT COVER DISK 24

ATOMINO

Start splitting the atom with this exclusive and hair-raising playable demo of the new puzzler from Psygnosis



LLAMATRON

Now dig out the green wellies to collect ba-a-d-sheep in our complete and exclusive version of Minter's well-weird shoot-'em-up

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WP TOOLS Versatile accessory to give you more power in *1st Word*

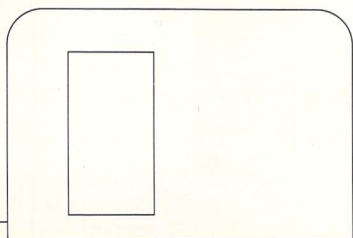
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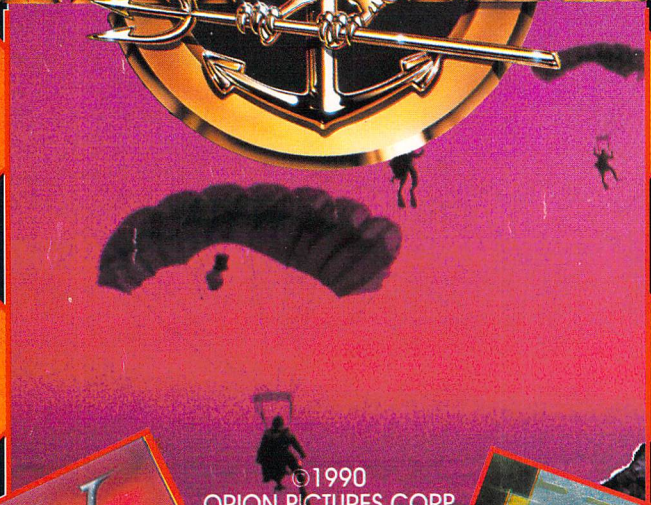
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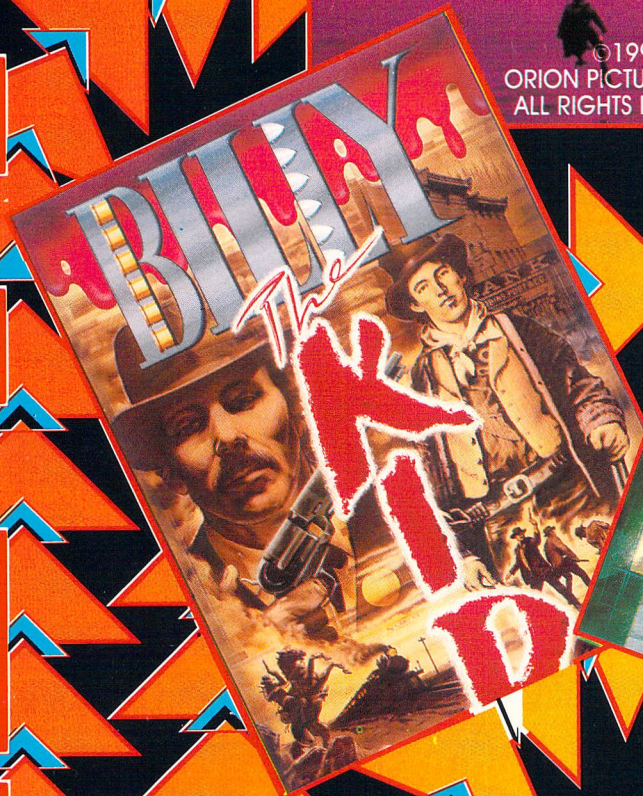
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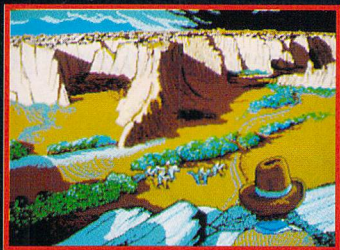
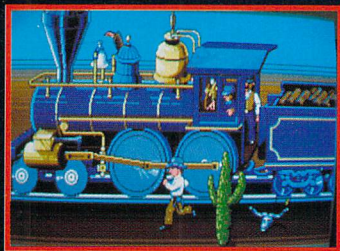
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ST FORMAT

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News Editor Andrew Hutchinson

Game Reviewer Ed Ricketts

Production Editor Alex Soboslay

Production Assistant Daniel Goodleff

Art Editor Martin Parfitt

Art Assistant Mark Nottley

Photography Ashton James

Contributors Dave Burns, Barrie Capel,
Glenn Corpes, Peter Crush, David Jones,
Vic Lennard, Chris Lloyd, Jeff Minter

Advertising

2ND FLOOR, RAYNER HOUSE,
23 HIGHER HILLGATE, STOCKPORT SK1 3ER

Advertising Manager Gail Blincow (☎ 061 474 7333)

Ad Sales Exec. Shaun Lancaster (☎ 0225 442244)

Ad Production Nickie Lucas (fax 0225 423929)

Editorial

30 MONMOUTH ST, BATH, AVON BA1 2BW

☎ 0225 442244 • FAX 0225 446019

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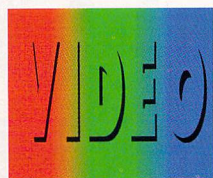
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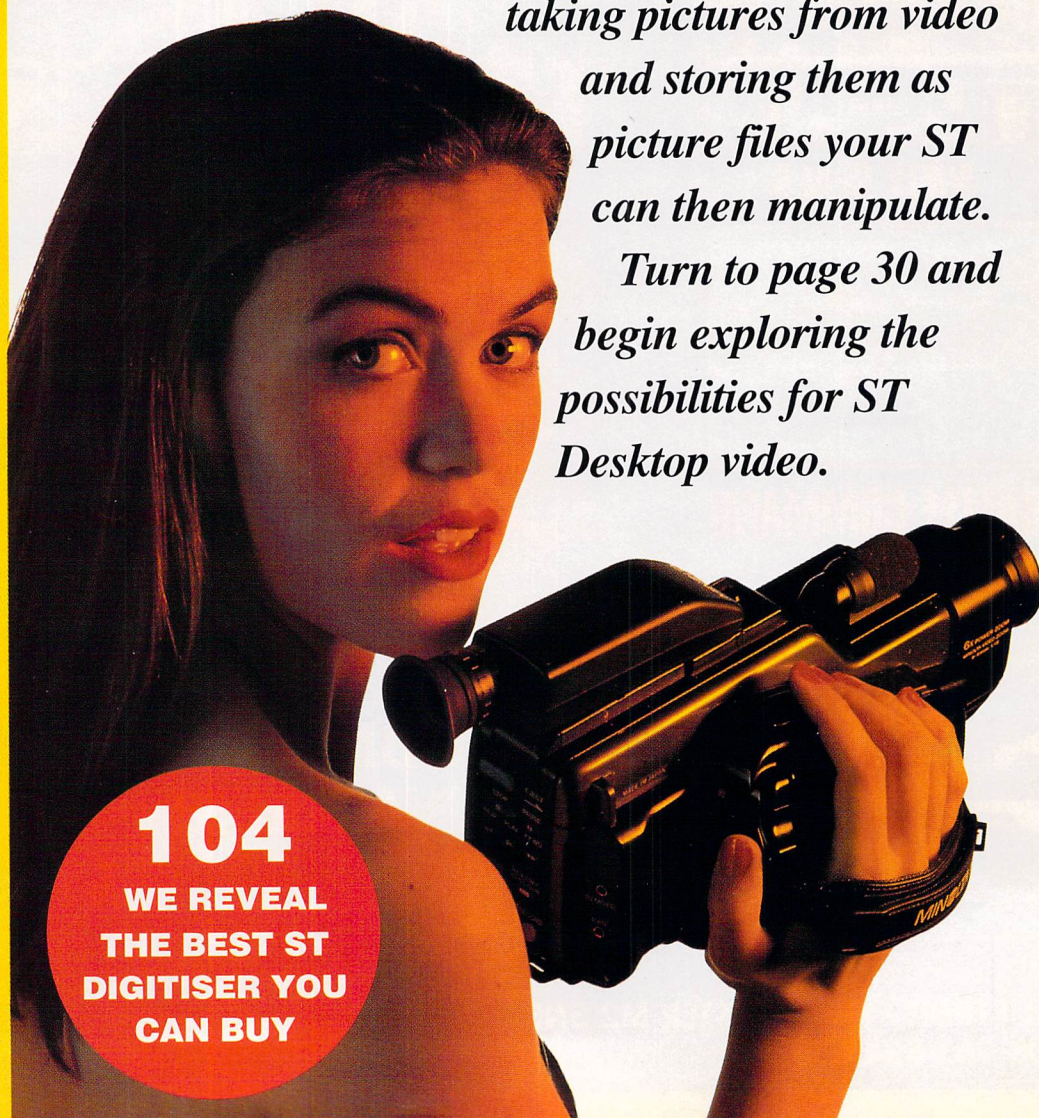
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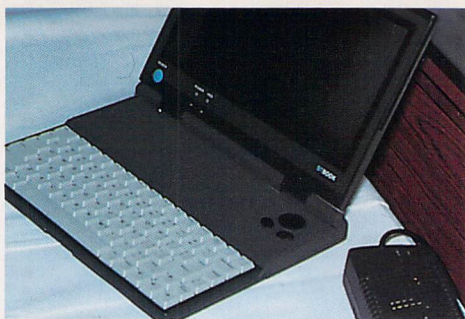


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music over your home videos.*

*Invest a little more and you can get your hands
on a digitiser, capable of recording a real image or
taking pictures from video
and storing them as
picture files your ST
can then manipulate.
Turn to page 30 and
begin exploring the
possibilities for ST
Desktop video.*



104
WE REVEAL
THE BEST ST
DIGITISER YOU
CAN BUY



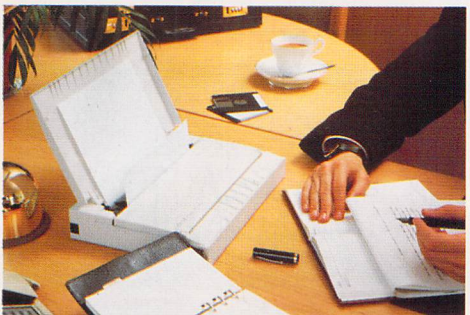
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IT'S SIMPLY TWO MUCH

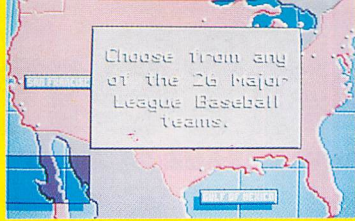
Battle it out with ferocious llamas for superiority on your own farm with this special *ST FORMAT* version of *Llamatron*, Jeff Minter's mind-blowing beat-'em-up. Then go round the bend with our playable demo of Psychosis' puzzler, *Atomino*. **Plus:** Part three of our assembly language programming tutorial by game-makers Bullfrog **And:** Four invaluable utilities for file-selecting, document handling, virus-spotting and more!

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 Start splitting the atom with this exclusive and hair-raising playable demo of the new puzzler from Psychosis

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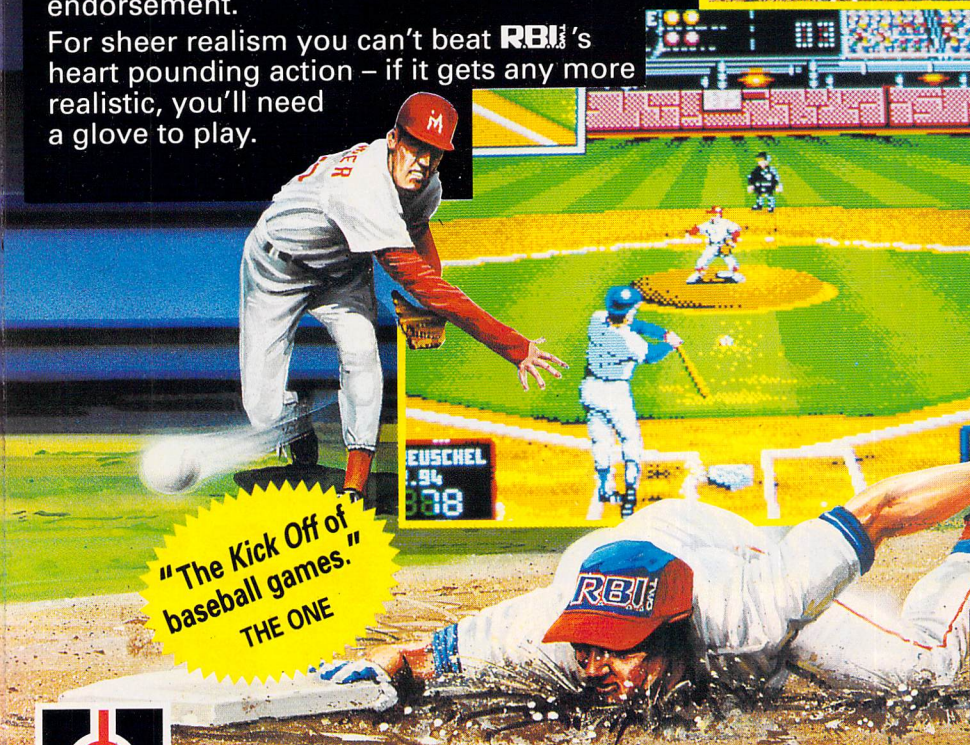
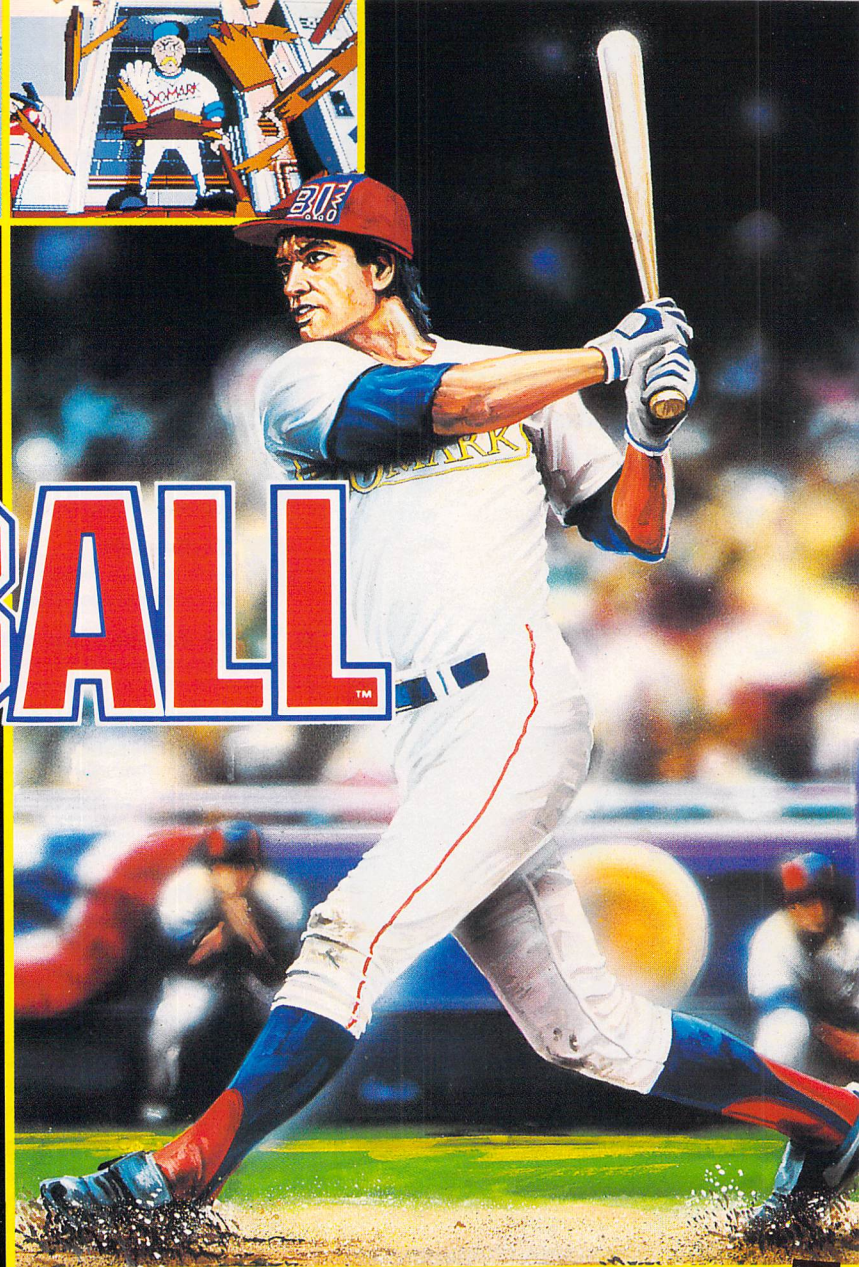
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STE price slashed ● STT transputer confirmed ● STE problems clarified

STF COMMENT

Powerful 16-bit ST technology for under £300. Atari have surprised everyone yet again with their new Discovery Xtra pack. The launch of the package means that Atari now have a cogent family of machines which beat the competition hands down.

The emphasis has shifted from games to "serious" applications, and from a disparate array of packs to a clearly-defined range of 16 bit machines. Atari have said that they will eventually drop the "little Es and FMs" from the range and refer to the computers simply as the ST. This means that as people upgrade to the STE there will be less and less confusion about exactly which machine they've got.

Of course it won't stop there. Perhaps the most interesting development is the official confirmation of the STT transputer add-on board (see page 10). Imagine for a moment the unrivalled processing power this will give to the ST owner. Applications such as video processing and graphic workstation packages will enjoy a speed boost of some 80 times for the low, low price of £500.

By the summer of 1992, Atari should have launched the STT, the Panther, STyle (the ST Pad) and the Notebook (the ST Book). The emphasis of course is on the "should." Existing Atari owners don't have to be reminded of the meaning of the expression "vapourware" – promised hardware that never appears. But if all goes as planned, Atari will have a range to beat the world.

STE breaks £300 barrier

by Andrew Hutchinson

Atari have slashed the price of the 520 STE by £50 to a remarkable £299.

The machine now comes in a new bundle named Discovery Xtra, with four games, three starter programs and a joystick. This cut, part of Atari's aggressive new marketing plan, comes just two months after they dropped the price from £400 to £359. At £299 the STE is now the best value multi-purpose 16-bit computer on the market.

The Discovery Xtra pack takes its place at the cheap end of the STE range, which includes the 520 STE Turbo games pack (£359) and the 1040 STE Family Curriculum pack (£399 – review, page 133). The Xtra pack is aimed squarely at younger users who want to play games but may progress to other applications.

Asked if this STE marketing strategy meant that support for the STFM would be dropped, Atari UK's Marketing Manager Peter Staddon insisted: "Not at all. From the end of this year the FM won't be available, but that's because demand will



■ The brand new Discovery Xtra pack, signalling Atari's decision to move away from just games: a 520 STE with four games, three utility disks and a joystick for £299



■ Bob Gleadow, Atari UK Managing Director: "We're keen to be seen as a pro-active company. As part of this stance we'll be shifting the emphasis away from a pure games focus to a more general computer usage image"

switch to the STE. There just won't be a demand for the STFM."

Bob Gleadow, Atari UK's Managing Director, revealed that Atari's new portable machines the ST Pad and the ST Notebook (see page 25) are to be launched at the 1992 Hanover show, with the former probably renamed STyle. He remained adamant that a floppy drive won't be added to either machine, but said a bolt-on hard drive would be made available. He expects the price point for the two machines to be somewhere between £1,500 and £2,000.

Surprisingly, Atari have also announced a price rise of £100 on continued on page 9 ➤

TEN REASONS TO UPGRADE TO THE STE

1. 4,096 colour palette to choose from, compared to the STFM's 512, means flashier games and more versatility in paint packages

2. DMA Sample quality sounds. You can now mix "real" sounds with chip music

3. In-built blitter chip means that block memory copying operations are speeded up. This speeds up practically all memory operations

4. Latest and best version of TOS means standard Desktop functions such as Format and Copy are vastly improved

5. Up to six joysticks can all be plugged in at the same

time. Multi-player games will never be the same again

6. Analog joystick ports – which can also accept light guns and light pens

7. 8-bit stereo sound output via stereo jacks on the back of the machine's casing

8. Memory upgrades are now considerably easier – simply add a new card of RAM

9. Increasing amounts of software are taking advantage of the advanced hardware capabilities of the STE, including hardware scrolling

10. Oh yes, and it's now only £299. What are you waiting for?

AIN'T THAT THE TRUTH

Some of the truly – er, *noteworthy* things people say

- "It takes five minutes to lose a reputation and years to build one up." *Peter Staddon, Atari.*
- "You English guys have got such cute accents. Any time you're over here, look me up." *Young lady from Atari USA.*
- "If you're sick, and you want it, it's available." *Martin Moth of Microprose on the forthcoming Gulf war mission disks for F-15 2.*
- "Did you know that Clint out of Inspiral Carpets has the same kind of Farfisa organ that Floyd used on Atom Heart Mother – the album with those cows on the cover? Yow!" *Jeff Minter, Lord high Yak*
- "Is this some sort of April Fool's Day joke?" *Simon Stock of Sound Technology on being told about the ST Pad.*
- "We've been quite arrogant towards the outside world." *Peter Staddon of Atari comes clean about the company's past marketing skills.*

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We will be releasing new versions of many of our existing titles over the next few months. To make way for this new product, we will be reducing (yes ... lowering!) the retail prices of older versions from 1 June. Or you can use the order form below to obtain these reduced price bargains now.

Here is a summary of our new releases:

HiSoft BASIC 2

- brand-new, multi-window editor with bookmarks, mouse block selection and much more
- tremendous increase in speed of program development and extra flexibility
- extensive, well-documented GEM library allowing high level control, with many examples
- many extra language features including static arrays for faster-running code
- link with Lattice C 5 and Devpac ST 3
- support for the 68030 and 68882 TT chips
- includes a resource construction set (WERCS) and a low-level debugger - no more to buy

Complete with a new manual, support for the STE and much more, BASIC 2 is set to be the BASIC of the 90s. Price will be £79.95 inclusive with upgrades costing

£39.95 to registered users of HiSoft BASIC and £49.95 for Power BASIC users. Release date: June 1991.



HiSoft Devpac 3

- brand-new, multi-window editor
 - re-designed user interface with pop-up menus
 - many more assembly optimisations
 - faster, more flexible assembly
 - HiSoft BASIC 2 and Lattice C 5 linkable code
- Devpac 3 is another major step forward for assembler programmers, novice and expert alike. Release is likely by late June 1991 at a price of £69.95. Upgrades from previous versions will cost £34.95.

Harlekin 2

- re-designed and enhanced scrapbook, giving a complete time management system
- greater configurability allowing Harlekin to be used even on a humble 520ST
- many other improvements and enhancements to this already amazing package
- works on the TT

Harlekin 2 is due for release in June 1991. Watch out for details of price and availability.

HighSpeed Pascal 1.1

Version 1.1 of this new, already immensely popular compiler is now available. Additional features are:

- inline assembler
- help desk accessory
- i/o-mapped maths co-processor support
- faster, improved editor
- more compact libraries

Upgrades from earlier versions cost £7.50 inclusive.



For those not in the know, HighSpeed Pascal comes from Denmark, is extremely fast and friendly to use and is very closely compatible to the immensely popular Turbo Pascal on the PC, even including the graphics unit from the PC.

Compilation speed is roughly 20,000 lines per minute with excellent code generation for the ST and the TT.

ProFlight 1.2

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This new version of our Tornado flight simulator includes improved colour graphics, the ability to save your cockpit set-up, a pause key, the view angle and more ... it even works on the TT!

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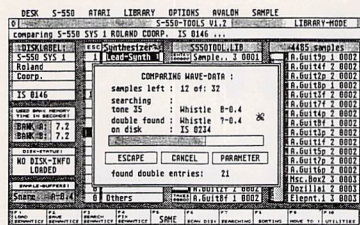
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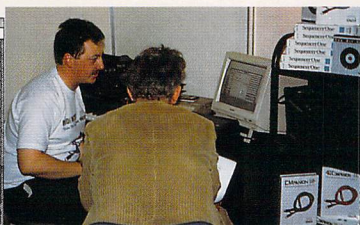
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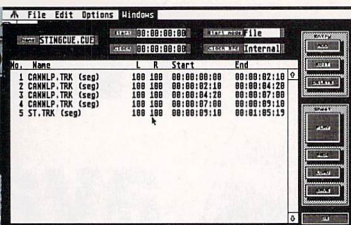
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■ (From L to R): Jon Bates, Daryl Still, A Punter and Peter Staddon discuss the niceties of MIDI and the Mega STE

New ST software on show at MIDI Music Fair ● Atari show the Mega STE

ST dominates MIDI Music Fair

by Andrew Hutchinson

The ST proved its domination of the computer music market at the 1991 MIDI Music Fair held at the Novotel, Hammersmith, in London. Practically every stand had an ST on show running MIDI software.

On the stand ST FORMAT shared with Atari, the brand new **Mega STE** was on show for the first time in this country. The 16MHz machine was running the new **AVR 16-bit sampling** software, which makes extensive use of the DMA chip. Peter Staddon, who was manning the Atari stand, said: "The Mega STE was extremely well received at the show. From the MIDI user's point of view, it represents an extremely compact and efficient computer solution. The faster operating speed of 16MHz enables it to double the speed of

software run on other machines, but because it's switchable it remains compatible with all existing software, though the new versions of *Creator* and *Notator* run at 16 MHz."

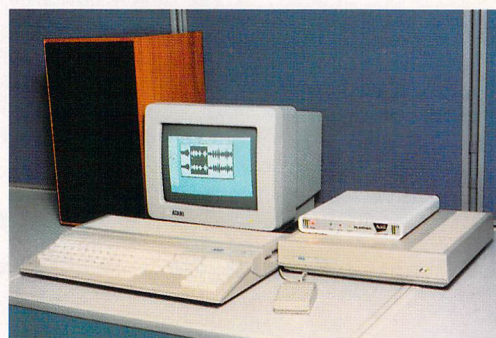
Audio Visual Research have been responsible for at least four samplers, ranging from a cheap entry level cartridge right up to last year's 12-bit Pro-series package (awarded *FORMAT* Gold in STF 16). On show at the stand was their latest machine, one which represents an assault on the professional end of the market.

The **AVR Pro-Series 16-bit sampler** can sample right up to CD quality, namely 44.1KHz. It oversamples 64 times on input and four times on output. Input and output filtering is taken care of by digital auto-tracking hardware and distortion is down to 0.05%. The sampler's pro-

jected price is £350. ☎ 0582 457348.

Intersound's new **Sample-Tools** package was also on show. It's a sample organiser designed to enable the user to keep track of up to 18,000 samples and include spot data on them in memory. The package costs 450DM (about £155) and works with the industry standard S-1000, as well as the W-30, S-550 and S-50 samplers. Once in memory all samples can be edited via a sophisticated sample display window. More details from Intersound, Loretostr. 47/49 1-39040 Salurn, Italy ☎ 010 39 471 884646.

Gajits Music software were doing brisk business at their stand. The



■ Plasmec's hard disk recording system is £839. Two years ago a similar system would have set you back £50,000

popular package **Sequencer One** has been updated and **Sequencer Two** is pencilled in for a summer release at £190-£250. The new version includes conventional notation, event list editing, simultaneous multi-track recording, sys ex bulk handling (which means the MIDI system can handle several instructions at one time) and improved note editing facilities. Gajits ☎ 061 236 2515.

Plasmec Systems have developed a remarkably inexpensive hard drive music recording system called **Adas**. (£839; available from DAC Distributors, ☎ 0784 462175). The package enables the user to record stereo music straight onto hard drive and then modify it. The most obvious use for the program is in creating remixes. By chopping pieces of the music out, you can create a play-list and then play back the re-arranged version. Plasmec ☎ 0252 721236.

Digital Muse were demonstrating two recently revised packages. Their **Virtuoso** and **Prodigy** programs are modular sequencers. This means they can be run on a machine with any size of memory, with the user simply loading in the appropriate module for any particular task on that machine. Prices were not available at press-time - contact Digital Muse ☎ 071 586 3445 for details.

STE price cut

continued from page 7

the Mega STE. Peter Staddon claimed this was because "The dollar has buggered us about. We're trying to claw back some of this dollar exchange problem we've had."

The company have just appointed a new advertising agency, who are to deal with what Atari call "repositioning" the STE range. Their new ad campaign, costing around £2 million, will revolve around slogans such as "Life's not a game; neither is our computer." Staddon said: "There are better machines about for just playing games on. We're looking to establish a position based on the ST's strengths." Thus

the ad campaign will cover the whole ST range, illustrating a clearly defined upgrade path.

"We're not going to play to the competition's strengths," Staddon said. "The ST isn't just a games machine. We see it as being a specialised computer that's a threat to the Mac." To back this up, Callum Ross, Atari's Technical Manager, revealed that there are hardware Appletalk capabilities built into the Mega STE. The machine can also accept Ethernet VMU networking cards straight onto the main board. This means that you could plug a Mega STE straight into an Apple or a PC network - though the best option of course would be to set up a network based around STs.

GOT AN STE PROBLEM?

Bob Gleadow, Managing Director of Atari UK, is keen to clear the air about STE DMA problems. As *FORMAT* reported in issue 16, a faulty DMA chip in some STEs could result in hard drive data becoming corrupted after just a few hours' use. Gleadow told *ST FORMAT* that if you've got a problem with your STE, and you can prove it's a legitimate DMA problem, then Atari will deal with it free of charge. If you feel your STE is one of the "small" batch of machines that has a duff DMA chip, then phone Atari on 0753 33344 and ask for the technical department. Oh, and tell 'em *ST FORMAT* sent you.

■ **ST FORMAT** got there first – way back in issue 17

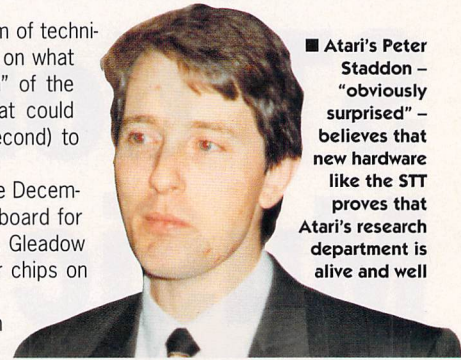


ST Transputer available by the end of the year

Atari have confirmed that they have a team of technical bods based in a Cambridge think-tank working on what Atari's boss Bob Gleadow calls "a cost-reduced version" of the ATW transputer workstation – a powerful processor that could speed STs up from one MIPS (one million instructions per second) to between 15 and 20 MIPS and enable true multi-tasking on the ST.

ST FORMAT reported on this hardware development way back in the December 1990 issue. Gleadow confirmed that the so-called "STT" will be an add-on board for the Mega STE, carrying up to 16 T800 chips running the Helios operating system. Gleadow said: "It's being designed to take up to 16 sites, but it'll probably be sold with only four chips on board. We expect the price to be about £500 to £600 when it's released at the end of the year."

Asked if he was surprised about our story on the board six months ago, Marketing Manager Peter Staddon admitted: "I was obviously surprised that **ST FORMAT** got hold of the story so early in the development stage."



■ Atari's Peter Staddon – "obviously surprised" – believes that new hardware like the STT proves that Atari's research department is alive and well

Light speed ST

Three American ways to speed up your ST right now

■ **Quick ST**, the popular software acceleration software, has been updated to version three. The program runs on all STs and TTs. It speeds up screen re-draws and enables the user to create a custom screen resolution which can be scrolled around.

The program installs itself at boot-up from an AUTO folder and can load in custom Desktop pictures. Custom fonts and icons are built in and these can be edited. The program now boasts vastly improved software compatibility and is available direct from the States at \$34.95 (about £20). Contact Branch Always Software, 14150 N.E. 20th Street, Unit 302, Bellevue, WA 98007, USA ☎ 0101 206 885 5893.

■ **Gadgets By Small's** 68030 accelerator board has gone into production in the States. At least 80% of software should enjoy a speed increase of up to 33MHz. The board is asynchronous and can be fitted to run at practically any speed.

Dave Small, the designer of the board, summed up the philosophy behind it quite simply: "There's something about getting there faster that's fun. We designed the board to buzz-saw through your programs, and we're giving you space for 8Mbytes of top speed RAM just to help do that."

The board comes complete with the 68030 chip, a co-processor

socket for a 68881/2 floating point chip and eight simm sockets. The 68030 board can only work with TOS versions 1.6 upwards, so the board comes bundled with TOS 1.6, thanks to a licensing deal with Atari USA.

Since there's plenty of room on-board for SIMM ram boards it's possible to build up your ST's memory to a full 12MByte. A basic 16MHz 68030 costs \$200 (about £120), the 4 Meg 16MHz 68030 version costs \$460 (about £220) and the 33MHz 68030 with the 68882 co-processor and 4 Meg costs \$800 (about £550). The board is available direct from Gadgets by Small, 40 W.Littleton Blvd, #210-211, Littleton, Colorado, 80120, ☎ 0101 303 791 6098. To check British availability, ring Ladbroke Computing ☎ 0772 203166.

■ **The Turbo 20 board** from Fast Technology takes a different approach to acceleration. The unit uses a 16K high speed static RAM instruction/data cache to help the built-in 20Mhz processor speed up machine operation.

James Allen, the president of Fast Tech, told **ST FORMAT** why his board is so good. "Well, the Turbo 20 is the fastest 68000 board available. It's got a more advanced cache design than any other board. It combines that with an 8MHz configuration mode. Installation in STs requires

some soldering but not in STEs. It'll appeal above all to DTP users. Some professional musicians are going to be interested. C-Lab *Notator* runs nearly twice as fast and it's the same story with *Calamus* – it'll run at about half the speed of a TT."

The board includes a hardware switch, which means that at boot-up the user can choose whether to run at 8MHz or 20MHz. However, it does require a high degree of technical ability to fit because you've got to desolder the original 68000 chip. The board typically doubles program speed and costs \$329 (about £200), from Fast Technology, P.O. Box 578, Andover, Ma. 01810, USA ☎ 0101 508 475 3810.

Freestyle sounds come out

New from Zone Distribution is a MIDI improvisation package called *Freestyle*. The program provides five backing tracks played via five MIDI channels, based upon the entry of just one or two chords. Thus a whole backing track can quickly be built up.

Freestyle can improvise on 32 different styles and Zone promise that further add-on styles will be available. Completed songs can be saved as standard MIDI files for later use. The package costs £149.

Also from Zone comes an *Advanced Guitar Tabulator* – a learning and composition tool for bass and guitar players. Cost is £99. *Band in a Box*, another improvisation tool, has just been updated to version four.

Zone Distribution ☎ 081 766 6564.

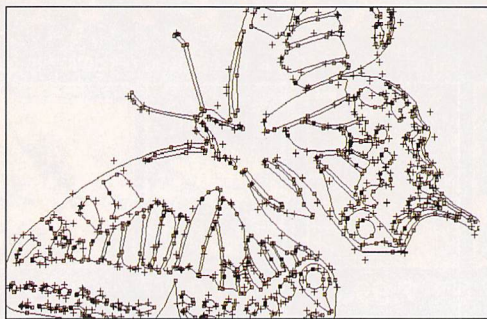
ONE YEAR AGO

A nostalgic roundup of happenings at this time last year

● This time last year, Mike Dale of Signa, distributors of *Calamus*, was up in arms about a "grey import" of the powerful German DTP package. Network News Services were importing *Calamus* from the States and selling it for £343, against Signa's £458. Frank Sheen of NNS was in an ebullient mood. He said he was "sick and tired of Mike Dale poking his nose into our business."

● In the spirit of Glasnost (and no doubt opening up a huge untapped market), Atari were planning to trade STs for Soviet 256K dynamic random access chips. Apparently the USSR were knocking out 2.5 million of these chips a month. Shame that they couldn't turn the same mass production expertise to food production.

● *F-19* joined *MidWinter* at the joint highest **FORMAT** rating for a game: 96%. Obviously our review was spot on – one year on, it's still riding high in the charts.



■ **Avant Vector** is the latest outline artwork program to be released for the ST. Original artwork can be transformed into vector drawings which can be scaled up or down in size smoothly. Here a butterfly has been transformed into hundreds of vector points, ready for scaling

A nice line in art

As **DTP packages** become increasingly sophisticated, so do the support programs for them. **Avant Vector** is a new program which enables the user to convert standard high res pictures into vector drawings, for importing into a DTP program.

Vector images are made up of a series of lines, rather

than pixels. This means that unlike conventional bit-mapped images they can be scaled up or down in size smoothly, with no loss of resolution.

Avant Vector includes automatic vectoring from original PI3, PC3, IMG, BLD, PIC or PAC format pictures. Mac, PC or Amiga images can also be vectored from TIFF, IMG or IFF

file formats. **Calamus**, **Fleet Street Publisher**, **Repro Studio**, **Timeworks**, **Publishing Partner**, **Pagestream** and **Easydraw** can all load in the newly vectorised images and manipulate them.

The program costs £234 from Atari Workshop, Windsor Business Centre, Vansittart Road, Windsor, Bucks. SL4 1SE, ☎ 0753 832212.

Duster-up at Realtime

By Ed Ricketts

If you're one of the loyal band of long-time *ST FORMAT* readers, you may remember a preview in issue 15 of a game called *Duster*, which was to be a spectacular 3D action/strategy game by Realtime Software – known for *Carrier/Battle Command*. Now here we are at issue 24 and there's still no sign of it. Then – a press release! Is it ready at last? Is it the best game of all time? Er – no.

Apparently, because of “a change of direction within the com-

pany” (ahem), Realtime felt they “would not be able to complete the program within the projected scale.” Forgive us for being cynical old sourpusses, but we can't help wondering what juicy behind-the-scenes crises this neat piece of press-release-ese might be referring to.

However, *Duster* is still promised for sometime this year. Rowan Software – who handled the ST conversions of *Falcon*, its *Mission Disks* and the coming-next-issue (-would-have-

been-in-this-one-but-it-was-bugged) *Flight of the Intruder* – have joined in the programming of the game in a joint venture. Their press release declares: “The opportunity to complete *Duster* came at just the right time. We are itching to get started.”

Presuming they do actually manage to finish the game, we might see it by the end of the year. Or not. Whatever, it looks as though *Duster* is definitely vying for the *Damocles/Midwinter 2* “Coming Soon” award.



■ **MiG-29M SuperFulcrum**, coming from Domark. To retain an east-west balance, the same software developers, Simis, are also working on an American Harrier game – the **AV-8B**. Launch date: late 1992

WHISPERS

Snippets from the ST universe

■ Fans of C-Lab's *Notator* software should be pleased to hear that version 3.1 is currently being beta-tested and is due out in a couple of months. It isn't a major upgrade – the only big addition is a graphical arrange mode. Contact Sound Technology on ☎ 0462 480000.

■ Picture the scene. A very large international company, not entirely unrelated to the subject matter dealt with in this mighty organ, arrange a football match between all the international divisions. The head of this company telephones from a land of waves and babes to congratulate the chaps on their moves towards detente. The first fixture between the English and French divisions takes place. A French player performs a crunching tackle on an English guy, who promptly pops the guy smartly about the head. Result: international chaos as 22 players practise the fine art of fisticuffs on the field.

■ At the last count, Atari had 480 registered user groups in the US. Kind of lays waste to the myth that STs aren't popular machines over there.

■ Atari have confirmed they are appearing at the Computer Entertainment Show in September. The company will be pushing the STE range, but their handheld Lynx will also be prominent. There's no word on whether the ST Notebook and ST Pad (just renamed STyle) will be around by then.

■ Good to hear that Lucasfilm are working on *Monkey Island 2*. The original received a **FORMA** Gold rating last issue. We wait with sweet-smelling breath.

■ Domark are beaver away at a follow-up to their popular *MiG-29* flight simulator. In fact it was so well received that they've decided to craft a new MiG game, called *MiG-29M SuperFulcrum*. Apparently the dashboard on the *SuperFulcrum* is different and the setting is switched to poor, put-upon South America. Watch for our review and remember: no ST, no comment.

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Need help with home finance?

If you're one of those people who actually fill in the stubs in their chequebooks, even after the third cheque, then this program should appeal to you. *Home Accounts 2* is a package which enables the user to keep complete track of all money-related matters.

The program has a very attractive front-end with customised icons. Digita have spent a lot of time making the program easy to use and yet retain the GEM front-end. Some features:

- Unlimited number (memory permitting) of accounts, transactions, standing orders and budget entries
- Report output screen, summing up complete net-worth
- Graphical display of your savings, budgets, and so on
- Updateable VAT facility
- Context or on-line help facility
- Recoverable trash can
- Standard, interest and budget calculator facilities
- Password facility

Home Accounts 2 costs £54.95 and is available from Digita International, Black Horse House, Exmouth, Devon, EX8 1JL, ☎ 0395 270273. Read the review soon in *ST FORMAT*.

cadaver - the payoff



Dianos is dead.

The Cadaver
contract has
been fulfilled.

But collecting
your reward
will prove
more difficult
than you ever
imagined.

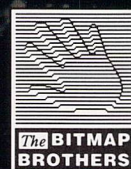
THE BITMAP BROTHERS



C1, Metropolitan Wharf,
Wapping Wall,
London E1 9SS

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Published by Renegade

◆ Original Cadaver Disc required ◆



The ST is just t

The Atari ST is the perfect introduction to the world of computing. The power of the ST allows you to run "serious" applications as well as playing games, and the ST system is flexible enough to allow you to expand as you develop your interests and expertise in different applications.

With so much diversity and power it is easy to see why the Atari ST family is one of the most successful ranges of computers in the world. But best of all is the built-in growth potential. The 520ST user of today is the TT user of tomorrow; beginning with games or a simple word processor, anyone can learn about computers and gradually acquire the skills of the professional computer user. And unlike many other systems, an Atari upgrade is not wasteful. Much of the software available for the 520ST will run on both the Mega STe and the TT systems. With an Atari an upgrade means that you can add new capabilities and expand your computing horizons without losing everything you have acquired along the way.

If you thought that computers were all about playing games you've been missing out on the real potential that you and your computer have. To find out more about either the **Atari ST** or peripherals for any applications simply fill in the coupon and send it to Atari at the address below.



Whether you are looking for a leisure computer, an educational computer, a computer for all the family or a powerful business system, look no further than the **Atari ST Range.**

Please send me more details about the Atari ST and other products

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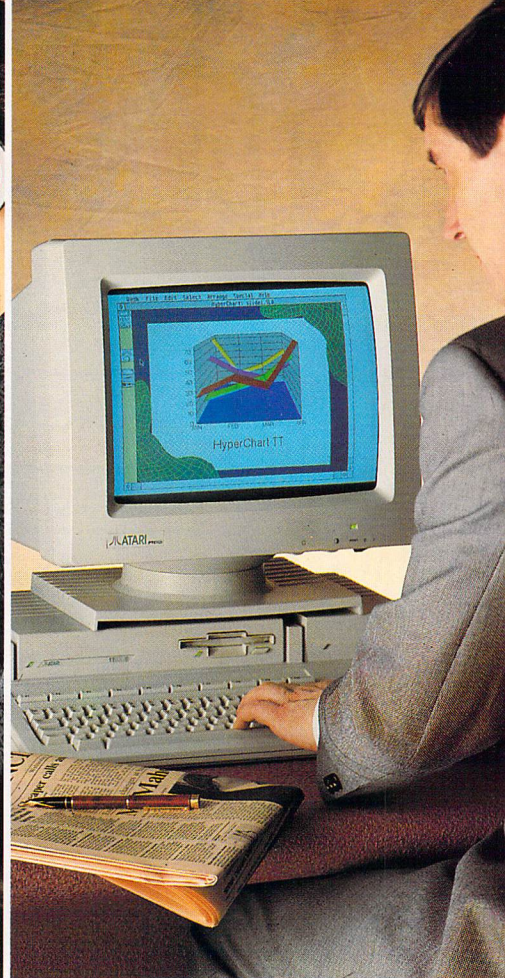


The **Atari 520ST** is an easy way for you and your family to learn about computers while having a great deal of fun. This best-selling computer has an impressive range of features that fit many requirements at home or in the office. A generous 512K RAM memory is included as standard - enough to run large spreadsheets and databases as well as the latest generation of computer games. There are plenty of expansion ports available for printers, modems, monitors and hard disk, and other peripherals allowing you to increase the power and flexibility of your system as needed. MIDI expansion ports are fitted as standard. MIDI (Musical Instrument Digital Interface) is the music industry standard interface that allows you to control both recording and playback of synthesisers and other digital instruments with your computer.

There is no other computer range in the UK that can offer its users such a wide variety of software support, ranging from educational learning programs to 16-bit computer games to professional quality desktop publishing packages.

The ATARI ST

the beginning



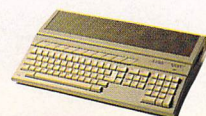
The power of the new **Mega STe** range makes it a serious contender for those who are after power computing. It is an ideal machine for the student or computer enthusiast who wants to run memory intensive applications such as Computer Aided Design (CAD) or graphics applications. The Mega STe features separate keyboard and central processor with a 1MB floppy disk drive and a 50MB Hard Drive for data memory. The Mega STe features a fast 16MHz operating speed, which can be switched to 8MHz to run any programs developed for the 520ST, making it even easier for you to upgrade.

For those of you who want to run a 'home office' with separate files for word processing, spreadsheets and accounts packages the Mega STe - with its vast amount of built-in hard disk storage - is an excellent choice. For those running graphics intensive programs the faster operating speed will make the Mega STe a much more productive machine. The Mega STe also features an extensive range of expansion ports that allow you to add even more power and flexibility to your system.

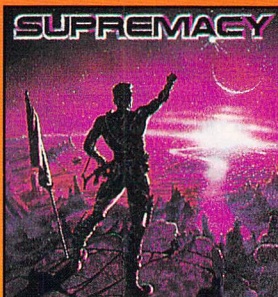
The portable **Atari Stacy** is completely compatible with all monochrome ST programs, but allows for complete portability. It features a supertwist backlit LCD mono screen, split horizontally and has all the standard ST ports. It is available in various configurations, with Hard disk as standard. It weighs approximately 15.2 pounds and has its own carrying handle making it easy to transfer from place to place. Because the ST, with its MIDI interface has become the accepted standard in the music industry, the Stacy is a boon machine for musicians with a busy schedule. Songs and sequences written at home can be stored on the built-in hard disk, then the whole computer can be easily transported to the studio or gig, with minimum stress, they can even be worked upon and improved on the road. Although it is the most specialist member of the ST family, the Stacy is still versatile enough to be used for all serious ST applications.

The incredibly powerful **Atari TT**, at the very top of the Atari range, is the first in a new generation of high specification professional personal workstations based on the successful Atari ST standard. Similar in style and design to the Mega STe, the Atari TT features a separate keyboard, 1MB floppy disk, 50 MB Hard Drive and the same range of excellent expansion ports. The basic model comes configured with 2MB RAM which can be expanded up to a massive 26MB. With a Motorola 68030 central processor, the TT runs at up to 32MHz. But speed and power are not all the TT system offers the professional user. Six standard built-in screen resolution modes mean that there is always one suitable for the purpose that you have in mind. For animation or computer graphics, choose from a palette of over 4,000 colours with the ability to display 256 on screen at any one time, and the exceptional 1280 x 960 pixel high resolution mode is one of the best screen modes available at any price.

— More than just great games



IN A WORLD FULL OF CHARACTERS



SUPREMACY

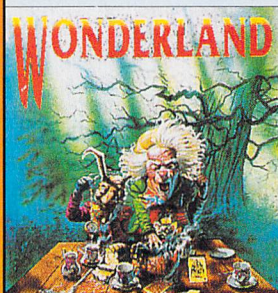
A strategic space opera of battle and conflict, strategy and management.



GAMES

WONDERLAND

Enter Wonderland and enter an adventure playground the like of which you've never seen before and will never see again.



ELVIRA: Mistress of the Dark

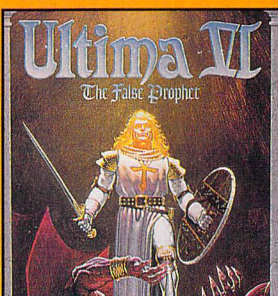
Tackle ghouls and goblins through a demon-filled castle with Elvira, world-famous mistress of the dark. More grizzly, more ghostly than any late-night horror film you've ever watched!



ACCOLADE
The best in entertainment software.™

LES MANLEY: Search for the King

Follow mild-mannered Les across America to find the world's greatest rock star. Les's humdrum existence becomes an exciting search for big bucks, beautiful babes and the King.



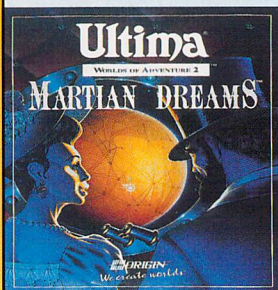
ULTIMA VI

Journey once again to Britannia, land of magic and adventure. Uncover the mystery of the Gargoyles in this exciting sixth episode of the award-winning ULTIMA saga.



MARTIAN DREAMS

The next worlds of Ultima, an adventure set in the Victorian age. A thrilling adventure of fact and fantasy to the Red Planet.



A "rookie" cop, an XB500 hoverbike, a city under siege and the Black Angels moving in. Will San Francisco see out 1997? If the toxic fog isn't halted, certainly not.

THE KILLING CLOUD



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games software

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IN PRODUCTION

■ *Damocles* fans still hungry for more should be pleased to hear that *Damocles 2* (or *Mercenary 3*) is due in the summer. Subtitled *Double Trouble*, it uses the *Damocles* universe but adds another participant. Some bloke called K C Kimm, ruler of Bacchus, wants to become king of the universe by destroying every other planet. Makes sense. As well as the interaction, there'll be a load of new-style puzzles to make the game as different from *Damocles* as chickens are from double-decker buses.

■ Ocean have snapped up more licences, and catch of the month must be ***The Simpsons***. No word yet what type of game it'll be, but there's certainly scope for excellent graphics. Another is ***The Addams Family***, being written by Ocean's in-house team. Of course it's based on those zany funsters of the '60s series, as is the new film that should be released in tandem. Then there's Bruce Willis' ***Hudson Hawk***, concerning an art thief hired to steal the blueprints for Leonardo da Vinci's alchemy machine. Uh-huh.

■ **US Gold**, no strangers to the licence front themselves, are currently working on **Godfather 3** for release in the autumn, along with **Indiana Jones and the Fate of Atlantis**, the game of the non-existent film. As with *Indy 3* there'll be separate action and adventure games. Now if USG can just convince Harrison Ford to make a fourth film...

■ The much-previewed **Big Run** – a rally racing simulation type thing from Storm – has been set back to a November release date, no doubt to avoid the annual summer slump in sales. Around Christmas, look for **Double Dragon 3: The Rosetta Stones** – more martial arts tomfoolery, no doubt. Remember *Jetpac* or *Lunar Jetman* on the old Speccie, programmed by Ultimate Play the Game? Well, Ultimate became Rare Ltd., and they're bringing him back for the ST in **Solar Jetman: Hunt for the Golden Warship**. No release date yet, 'cos Storm are trying to tie up another deal with Rare for a second title, **Battletoads**, a Teenage Mutant Thingie Turtles clone.

■ Elite have a pile of conversions lined up, first of which should be **Last Battle** (a beat-'em-up), followed by the budget release of **Paperboy** in September, **European Championship 1992** in November and **Caveman Ninja** for Christmas. Mixing beat-'em-ups and "prehistoric"-style games, it's being converted from the Data East coin-op by the team who did **Shadow of the Beast** on the ST. Another coin-op conversion – but not due till spring 1992 – is (ahem) **Edward Randy**. Apparently it features fight scenes on the wings of biplanes in flight and a whip with which Edward can do amazing things. Mind, begin boggling.

Previews

Dames et gentlemen! Un temps encore, le FORMAT crew avez pour vous un formidable swag de prevues

After Activision – the software house behind *R-Type* and *Millennium 2.2* – went up for sale at the end of last year, it looked as if we might never get to see their potential chart-toppers, *Deuteros* and *R-Type 2*. Now they've been taken over by The Disc Company, a French-based software publisher, and you can expect to see many new releases from them soon.

Top of the list for the many *Millennium* fans must be *Deuteros*, the sequel which seems like it's been years arriving. First previewed in *STF* 17, it continues where *Millennium* left off. Having restored the planet Earth to its former glory – after a gigantic asteroid smashed into it – from their base on the moon, the entire population have been evacuated back to the mother planet. But no thought has been given to the Moonbase, or the other colonies on the rest of the planets – some with huge numbers of mutated inhabitants. Left to their own devices, they soon come up with their own inventions, not all of them friendly. Meanwhile, secure on Earth once again and with no immediate threat, the survivors gradually lose all knowledge of space travel and weaponry. But they have to learn again pretty quickly because the mutant races



■ Knock knock. "Who's there?"
Deuteros. "Deuteros who?"
Deuteros-car the gorilla going on the
rampage the whole place is wrecked.
(I don't know. Pathetic, isn't it?)



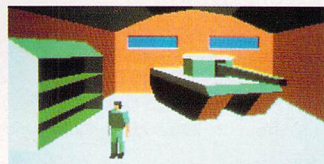
■ "Yeucch! What's that huge blob of nauseating yellow sludge doing in that *R-Type 2* screenshot? It seems to just sit there menacingly no matter which way I turn and regardless of what I fire at it!" "Oh, er, sorry – I've got a cold..."

Activision go Gallic

aren't idle... *Deuteros* is due in August and if it lives up to the promise of previews we've seen it should be a real corker.

Before that, though, look out for *R-Type 2*. *R-Type* was the coin-op conversion that defied the odds and turned out to be one hell of a blast. One of its best features was its collectable weaponry that enabled you to turn your puny little ship into a massive harbinger of photon death (as it were). *R-Type 2* offers all this and more. Played over five levels (less than the original, but then who managed to reach level eight anyway?) including a refinery, an underwater cavern and the home planet of the Bydo Empire (boo hiss), the game offers plenty of collectable weapons to help you, such as old faithfuls the side pods, front pod and the power up charge, and some new ones like a blue bounce laser, terrain-hugging bombs and flame throwers.

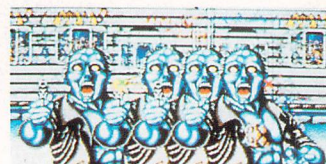
The plot of *Hunter* sounds suspiciously like that of *Carrier Com-*



■ **Lesson 24:** how to enter into the spirit of these things and get *really* involved in ST games. All together now: "Behind you! It's behind you! Tcch! Call yourself a *Hunter*?"

mand. A group of islands has been occupied by the enemy and it's your job as a highly trained soldier (again) to carry out a number of sabotage missions to liberate the islands. The difference is in how you do it. Each island has a different objective and time limit, given to you at the mission briefing, and most of the time you're on your own – no huge carrier to back you up, though there are a few vehicles and aircraft about. *Hunter* is a solid 3D game set in a fractal generated landscape and is due in August.

Finally there's *Beast Busters*, a straightforward blast with no plot as such, just seven levels in which a variety of strange beasts attack the player. From the screenshots it looks as though the game could be another *Operation Wolf* clone, though some of the levels scroll vertically. *Beast Busters* looks like being the least impressive of the new releases, but for the full verdict on this and all the other games watch for the full *STF* reviews.



■ "Hello, we're from the church of the Latterday Enlightened Zombies and we'd like you to have this flower." Bet you're glad you're a *Beast Buster* now, aren't you?

LOOKING DOWN ON REVENGE



■ The peace of this happy, unsuspecting family is soon to be brutally shattered. Yes, that's right – the Jehovah's Witnesses are on their way. A peaceful scene from *Shinto's Revenge*, before the bloodletting begins

Gauntlet continues to cast its shadow over the ST world. US Gold are releasing *Gauntlet 3* in a month, but the next game with an overhead perspective view should be *Shinto's Revenge* from Millennium. A stock nasty character has captured this Shinto bloke's girl-

friend, and since he's got nothing better to do he's gone off to rescue her. Visually, this looks like a standard version of *Gauntlet*, but with much larger player graphics in that distinct Japanese cartoon style, set in an apparently huge playing area.



SICKLY SUPERHERO TACKLES THE TRASH

Oh dear. Oh dear oh dear. It had to happen, didn't it – "the first ever environmentally conscious software challenge" is on its way from Mindscape, going by the name of (retch) *Captain Planet and the Planetoids*. "Our children can inherit a legacy of wastefulness and pollution... or follow Captain Planet in his fight to cleanse our fast deteriorating world," goes the blurb. Would you want to be under the command of someone who wears a blue and red body stocking and calls his disciples Planetoids? Yes? Fine. Just don't call us when you get arrested for indecent exposure.

The only information at the moment is that it's a cutesy platform game, and from the screenshots we've seen it features hordes of clean-cut well-behaved children living in environmental harmony under the guidance of their mentor. Yuck. Still, it may be a good game for all that (unlikely though that is). Watch for the review next issue.

■ This is *Captain Planet*. He's going to save the planet. With the aid of his dedicated team, he's going to cleanse the whole globe of the filth that's choking it. No wait, you have to listen! A little leprechaun told me! Wait – come back!

PLEASE MYTH, WHAT'S A NINJA?



■ "Come back! Come back, *Last Ninja (3)*! I want to play with your shuriken!" Ah me – the perils of being famous

Think System 3, and what springs to mind? A load of old ninjas. After *Last Ninja 1* and *2* and *Ninja Remix*, they're now set to unleash *Myth* upon an unsuspecting public. *Myth* was first released on the 8-bits and apparently met with overwhelming waves of admiration (it says here). Naturally an ST version was on the cards.

The main character, once an ordinary bloke in jeans and T-shirt, has been transformed into a muscle-

bound Conan sprite, a hero with a capital H and not afraid to show it. Like *Gods*, the game's a platform-style arcade beat-'em-up with puzzle elements to add variety, played over four levels of many sub-levels. All the usual claims are being made: atmospheric music, superb animation, "glossy" graphics, etc etc. But wait for our full review before you do so much as even glance at the box in Boots.

The poor old Ninjas haven't been completely forgotten: *Last Ninja 3* is also due soon. It's an action adventure game, which means you wander around kicking people in the head while picking up crystals and suchlike. The first four levels depict chambers of a temple in Tibet in which you're fighting your adversary Kunitoki, each chamber in turn representing the four elements of Water, Fire, Wind and Void. (Doesn't sound quite right...) Impressive claims are being made: sword fights use the animator's trick of speed-blurs (as seen in *Golden Axe*) to reinforce the impression of movement; you now have to manufacture objects instead of just picking them up; and oriental theme music reminiscent of those old '70s martial arts films is promised. Personally, I can't wait...

YOU THERE! STOP SMERCING!



■ See, you're this crack secret crack daring heroic crack and wonderfully super "merc" type person who runs around all day in his balaclava and shouts very very loudly indeed

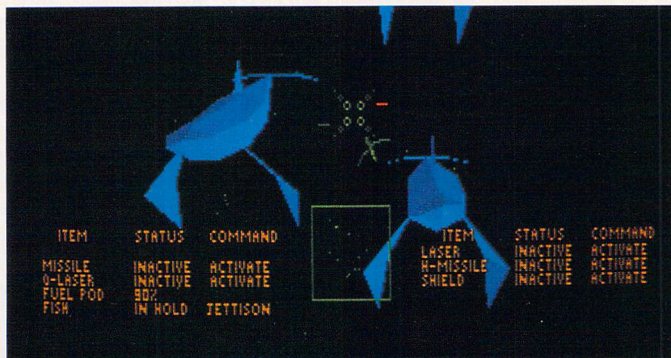
US Gold continue their relentless struggle towards world domination with another Capcom conversion, *Mercs*. The wibble goes like this: you – a skilled, professional and virile soldier trained in anti-terrorist tactics – are hired by the US Government. It seems a former President of the USA (no names, no autographs, no cameras – oops! a clue) has been kidnapped by revolutionaries. A diplomatic approach is called for, so you are sent in as part of an elite corps of mercenaries known as the *Mercs*. Your mission: rescue the Pres, stop the rebels before they take over (er) Zutula and save the world too.

Now what is the game really about? The screenshots promise a *Commando*-style vertically-scrolling shoot-'em-up with the traditional aim of destroying the maximum number of enemy scum possible. There are eight levels and a simultaneous two player option to boot. Is it any good? You'll just have to wait for the *FORMAT* review soon(ish). **stf**

THE KILLING EYE STORM SHOW

Remember *The Killing Game Show*? Keep it in mind while you read the plot of *Eye of the Storm*, Empire's imminent opus. Far in the future, law-free zones have been created by the holovision conglomerates. By law, everything that happens in these zones must be filmed for the networks and transmitted to the viewers back home, 'cos it makes great telly. You've been sent into a newly-discovered zone in the depths of Jupiter's eye, on a kill-or-be-killed mission.

Plot aside, the specs for *Eye* sound promising. The game uses solid 3D graphics with light source illumination, depth cuing – that is, colours become darker the farther away they are – and Gouraud shading. This effectively blurs the

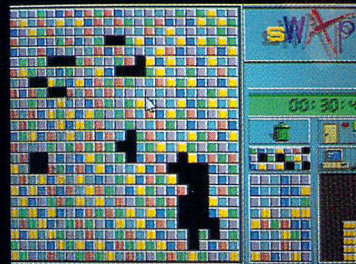


■ "I think we're lost. Last thing I knew we were swimming around with that nice man from the BBC and now here we are in this blummin' *Eye of the Storm*"

boundaries of colour between the individual polygons of an object and gives the shape a smoother appearance. Add to this 210 different object types, some with over

100 faces and 26 frames, and graphically the game appears strong. Whether the gameplay lives up to the visuals remains to be seen – in our review soon.

Is your brain big enough for SWAP



TAKE THE SWAP TEST – HOW BIG IS YOUR BRAIN?

1. What is the next number in the sequence:
2, 3, 5, 9, 17, 33, ?

2. Complete the next figure:

A	3	F	27	?
1	C	9	J	?

3. Insert the same three letters to make five words:

F
 SH
 L
 D
 FR

} _ _ _ _

4. Insert the shapes that complete the box:

■	▲	●	I	=	18
▲	▲	▲	I	=	19
■	I	I	I	=	23
■	●	?	?	=	15

5. Supply the missing number:



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- Full competition mode, with hi-score table.
- Extra game features – debits for stupid moves, “avalanche” facility and supplementary tiles for when your brain-power begins to flag.

ST-AMIGA-PC

PALACE

HOW YOU SCORED

0-1. Your brain-power is severely under-utilised. Buy SWAP and get some much needed practice in.

2-3. Pretty good. Buy SWAP – A few sessions of brain-pulsing action could radically re-model your cranial capabilities.

4. Wow! Your mind is definitely kickin'! Buy SWAP and your already huge brain will soon be spilling out of your ears!

5. Cheat! You can't possibly have a brain that big, buy SWAP and check.

ANSWERS

1. 65 2. 18 3. AME 4. ▲▲ 5. 10

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STcharts

"Don't believe the hype – it's a sequel, as an equal. Can I get this through to you?" – Public Enemy, Don't Believe The Hype

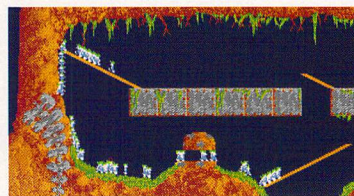
ST CHART CHAT

Hi ho, hi ho, it's off the cliff we go. The *Lemmings* march right up to the top spot, but are they promptly going to leap into the chasm next month –

better known as the bottom of the charts? *Final Whistle* is proving very popular, no doubt because of the FA Cup and the League play-offs – or could it simply be because it's a real doozy of a game?

There seem to be a heap of old familiar names still scattered through the listings – *Kick Off 2*, for instance, must have been there for about a decade and a half – but it looks like there's a challenge coming from the recent crop of adventure games!

In the software house stakes, Mirrorsoft are bouncing back with a vengeance too. Their reissues of highly rated games from the past have proved very popular despite a "budget" price of ten squids. However US Gold appear only three times in the top 40. No doubt they're preparing a salvo of licences to launch at the Christmas chart.



■ **"Suicide squad – eyes right! Right, chaps, we've made it to the top, now we've got to stay here. Oi! Stop pointing at Final Whistle"**



■ **Ugh, ugh, belly bump, ugh. Don't stop till ya drop. Ugh, ugh, belly wobble, ugh. Let's all do the zany Chuck Rock – in at number 5**

CHARTBUSTERS

We have a winner! Come on up, **Gavin Parish** from **St Austell** in sunny Cornwall. Pat yourself on the back, Gavin, you got as close as anyone and successfully predicted *Lemmings'* blind supremacy and *Final Whistle's* staying power. A copy of the *snort ooor fnarr fnarr* multi-event game *Viz* is bottom-humouring its way to you even as we speak.

Right, if you think you can predict the top three games in the charts, send us a postcard (only *one*, remember – multiple entries will be burned). Write on it your predictions, the month you're predicting for, your name and address, the game from the top ten you'd like to win and your favourite quote from James Joyce's "The Dead." Then send it to: *Chartbusters*, *ST FORMAT*, 29 Monmouth Street, Bath, BA1 2AP. If no-one gets it right, the nearest correct entry out of the hat wins. This month's pointers: *Cruise for a Corpse*, *Flight of the Intruder*, *R-Type 2* and *Beast Busters*.

■ Main Charts: *STF* refers to issue and score of review in *ST FORMAT*. These full price and budget *ST* charts are compiled and supplied by Gallup. © 1991 European Leisure Software Publishers Association Ltd

CHART KEY

RE Re-Entry

NE New Entry

◀▶ Non Mover

▲ Up

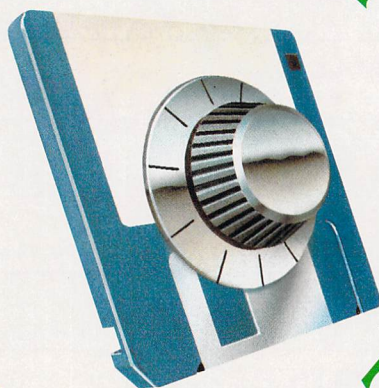
▼ Down

ST BUDGET TOP TEN

- ▲ **Steve Davis World Snooker** CDS
- ▲ **Operation Wolf** Hit Squad
- ▼ **Fantasy World Dizzy** Code Masters
- NE** **Ninja Rabbit** Micro Value
- NE** **Kick Off and Extra Time** Anco
- ▼ **Little Puff** CDS
- NE** **North and South** Digital Integration
- NE** **Speedball** Mirror Image
- NE** **California Games** Kixx
- NE** **Sherman M4** Digital Integration

1	▲	LEMMINGS	Psygnosis	£25.95	STF 24: 94%
2	▼	FINAL WHISTLE	Anco	£12.99	STF 23: 70%
3	NE	THE KILLING CLOUD	Mirrorsoft	£29.97	STF 22: 93%
4	▼	SPEEDBALL 2	Mirrorsoft	£24.99	STF 18: 88%
5	NE	CHUCK ROCK	Core Design	£25.54	STF 23: 82%
6	▼	VIZ	Virgin	£24.99	STF 22: 74%
7	NE	HERO QUEST	Gremlin	£25.99	STF 24: 78%
8	▼	F19 STEALTH FIGHTER	Microprose	£29.99	STF 12: 96%
9	NE	MEGATRAVELLER	Empire	£29.99	STF 24: 67%
10	▲	TEENAGE MUTANT HERO TURTLES	Mirrorsoft	£24.99	STF 19: 38%
11	NE	SUPERCARS 2	Gremlin	£19.99	STF 24: 74%
12	NE	WONDERLAND	Virgin	£30.64	STF 24: 85%
13	▼	POWER UP	Ocean	£29.99	STF 23: 82%
14	NE	GODS	Renegade/Mindscape	£25.53	STF 22: 92%
15	▼	KICK OFF 2	Anco	£24.99	STF 14: 92%
16	NE	SUPER MONACO GRAND PRIX	US Gold	£25.53	STF 21: 71%
17	RE	FLOOD	Electronic Arts	£25.99	STF 13: 91%
18	▼	FISTS OF FURY 2	Virgin	£29.99	STF 23: 65%
19	▼	POWERMONGER	Electronic Arts	£29.99	STF 19: 93%
20	▼	SWIV	Storm	£24.99	STF 22: 78%
21	▼	Golden Axe	Virgin		
22	▲	Test Drive 2	Accolade		
23	NE	Big Box	Beau Jolly		
24	RE	Manchester United	Krisalis		
25	NE	Panza Kick Boxing	US Gold		
26	▼	Elvira	Accolade		
27	▼	'Nam 1965-1975	Domark		
28	NE	Brat	Mirrorsoft		
29	▼	Hollywood Collection	Ocean		
30	▼	Turrican	Rainbow Arts		
31	▼	Power Pack	Beau Jolly		
32	▼	Lotus Turbo Challenge	Gremlin		
33	▼	Robocop 2	Ocean		
34	RE	Xybots	Domark		
35	NE	Navy Seals	Ocean		
36	▼	Toyota Celica Rally	Gremlin		
37	▼	MidWinter	Rainbird		
38	▼	UMS 2	Rainbird		
39	▼	Night Shift	US Gold		
40	RE	Coin-op Hits 2	US Gold		

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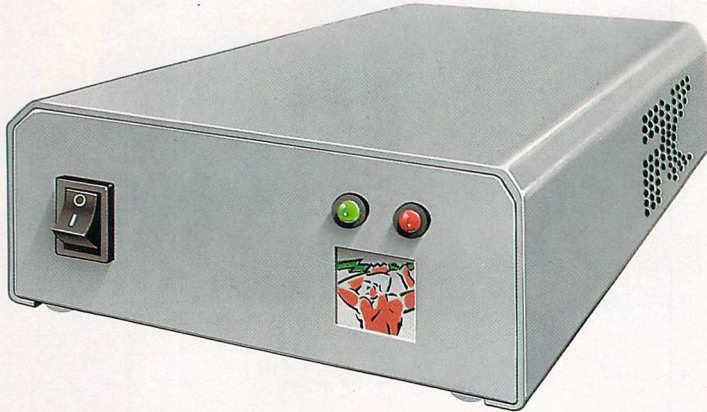
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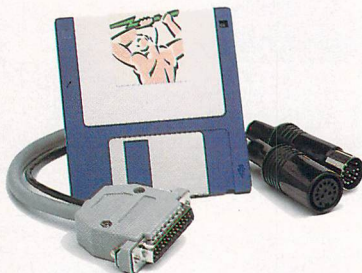
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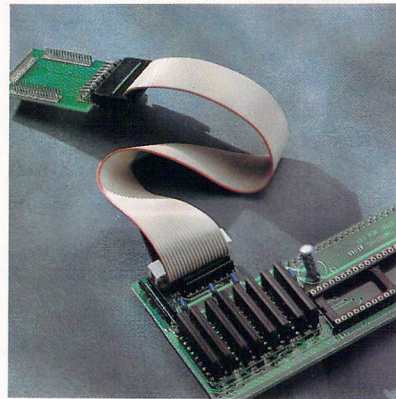
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About 12 months ago, Atari set themselves a very ambitious goal, according to Richard Miller, Atari US's Vice President in charge of Research and Development: "to design the most portable and friendly computers in the world." Their two new machines, ST Pad and ST Book, just might come close to that goal.

As *ST FORMAT* reported in issue 22, the ST Book – a replacement for the ill-fated STACY portable – is a compact 68000-based machine with a footprint of 297mm by 210mm, under 35mm thick, boasting an LCD screen and either 1MByte or 4MByte of RAM. Even more exciting is the ST Pad, a keyboard-less "portable user interface" – basically a pad you can write on directly with a special stylus.

In a recent press conference, Atari US Vice Presidents Leonard Tramiel and Richard Miller explained that one of their main goals was to achieve 10–20 hours of battery life. To do this, both the Pad and the Book use a standby mode: if nothing is happening, they can actually stop the processor clock and video refresh, reducing power demand by over 20%. There is also a "suspend and resume" facility – a major safety feature, according to Leonard Tramiel. "If you've been running batteries for 15 hours," he explained, "they don't have enough power left to start the hard disk. That would crash a less sophisticated system. With the Book, however, you simply turn the machine off in the middle of your application and not lose anything. And you can maintain this data in memory for months." In standby mode, Richard Miller said, both the Pad and the Book can maintain the contents of memory for probably over six months.

An AC adapter and battery charger enable you to recharge the batteries fully in about two or two and a half hours without degrading the battery pack.

The ST Book has an internal 2.5 inch 20MByte hard drive. "We can make versions with up to 60MByte today," Richard Miller said, "and by the end of the year over 100MByte. The Book also has the capability of an internal fax modem – 9600 send fax, 4800 receive fax with 2400 Baud data" but without MNP (the Micro-com Networking Protocol error correction system). Leonard Tramiel added: "We intend to include several utility packages, a diary and alarm software very much like what's in the

Portfolio but friendlier to use, and various useful accessories like a clock and calendar."

Since the Book is only 34mm thin, a trackball could not be fitted and Atari came up with another alternative – "something we're not quite sure what to call yet, 'mouse-pad' or 'joy-pad,'" Richard Miller said. "It's a pressure-sensitive mouse. We were a little concerned about this, so we tried it out on Sam Tramiel and he fell in love with it almost immediately."

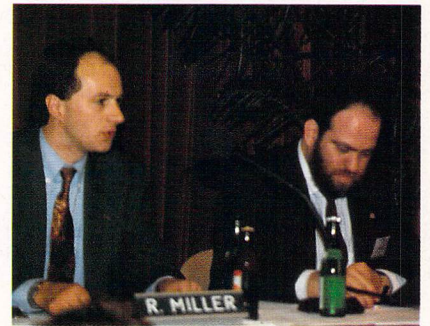
The Pad and the Book are technically very similar, and both offer the full set of ST peripheral ports. "Both machines have a full expansion bus," Richard Miller said. "The connector has 120 pins and is about 1.5mm thick. We expect people to hold the Pad in their hand, and for that reason we were unable to put a hard drive inside it. What we used are memory cards – up to 4MByte each, which is significantly more than a floppy disk and their access time is very fast. The expansion devices actually sit underneath the machine, so you're still able to hold it the same way. The devices include a radio modem for wireless communication and CD-ROM – that would enable the Pad to become a portable electronic encyclopaedia."

The most exciting thing about the Pad is that you don't even need to be able to type to use it. Leonard Tramiel explained: "There are at least three different methods to get text into the machine. You don't want to write a novel in longhand, so you can plug a keyboard into it. For small notes you can use a box which can recognise your handwriting. The system is trainable, so although it can recognise handwriting quite well without being trained, after using it for a few days you can even write things in code. This information can be handed off through the operating system to an application as if it were typed on the keyboard. For slightly larger pieces of text you can pop up an image of the keyboard and just tap on the appropriate keys."

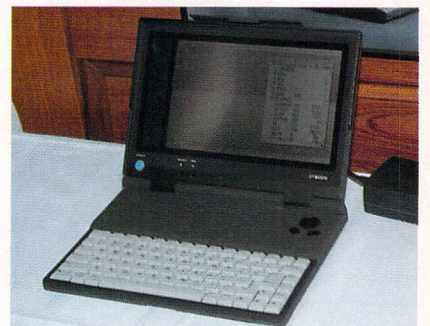
What's more, data can also be taken up from a disk created on another machine or transferred through serial and parallel ports directly.

"One of the very nice things you can do with a machine as graphical as this," Leonard Tramiel went on, "is use it as a notepad. You can just draw, make little squiggles, then tell the system to store this with some set of key- ➤

Atari's recently announced new machines, ST Pad and ST Book, promise truly portable ST power – even if you can't type! Don Maple has the inside story from Atari US's senior engineer himself



■ At Atari US's press conference: Richard Miller, the British lad formerly with Sinclair but now Atari VP R&D, and Leonard Tramiel, VP Software



■ The ultra-thin ST Book: fully-compatible and genuinely portable ST power – with 100MBytes of memory possible by the end of the year



■ The ST Pad: a hand-held, keyboardless "portable user interface" that makes ST power accessible even if you couldn't type a word

words. There'll be a small database program that'll enable you to retrieve these.

"One of the major uses for these sorts of machines is to fill in forms," Tramiel said. Atari intend to offer an application to make it very simple to build a form and then to run it. Another system due to be included should enable you to use the Pad either sideways, in "landscape" format, giving you a 640 x 400 display, or upright, in "portrait" orientation, looking more like a book.

To find out more about these fascinating machines, *ST FORMAT* spoke exclusively to Tracy Hall, Atari US Senior Design Engineer. He began by explaining that the Pad was conceived as a "vertical market device... an opportunity for third-party people to develop their own markets" – that is, Atari would produce the hardware and leave it to third parties to find and develop its applications. From the outset, however, it was designed to be a machine you could use even if you weren't "computer-literate."

"You need to be a user, not a computer expert. The Pad actually started off as a touch machine rather than a stylus machine – as in finger-touch. The reason we went away from that is there isn't a currently existing technology that allows you to do both finger input and accurate pen input. There's various technical reasons for it..."

And biological. The finger is much thicker than the stylus...

"You could also have picked up a plastic pen and tried to use it, but it turns out even that wouldn't have worked."

Something like the Koalapad?

"Yeah. Exactly. The technology has not advanced much over that. And you still have that choice – you get either a pen or the finger. The circuitry in this thing actually is very close to compatible with a finger type of display."

You are basically getting the X and Y coordinates of the point, the same as for touch sensitive pads. Do you triangulate?

"No, we don't triangulate. We actually set up a voltage gradient across this sensitive surface, once in the Y direction and once in the X direction, time multiplexed."

Do you have sensors along the edge?

"Effectively. There is a piece of glass in front of it, which is coated with a resistant material. The edges are set up in such a way that we can drive a voltage gradient across the field – top to bottom and then from left to right, linear across the screen. Each time I set up the gradient the pen is actually in metal contact touching the resistant material. It's a high impedance input. It's basically a voltage measuring device."

The pen actually measures the voltage at that particular point?

"Yes. The reason your hand doesn't interfere with this is that the screen is a relatively low impedance system compared to your hand."



■ The Pad can recognise your handwriting, and text you input using the special stylus can later be used in a word processing program as if typed in!

Is there any way to adjust the sensitivity?

"It isn't so much sensitivity as the alignment. The screens are not perfectly linear. Essentially we do a calibration operation. That'll be one of the Desktop utilities. Basically you end up having to touch five points – that adjusts the linearity. We also provide a very simple test – you just touch one point – to correct for parallax. A touch sensitive screen is a very short distance in front of the LCD, so at extreme angles you get a little bit of parallax effect. It's essentially negligible. Where it'd really matter is if you switched from landscape to portrait mode. The point of view would change enough that you would want to realign the parallax."

How do you switch between landscape and portrait orientation?

"That's actually done in software. The tools in the AES and VDI are already capable of turning 90 degrees. Programs that completely obey 'Atari rules' would read the aspect ratio, adjust themselves accordingly and work right off the bat. It will be just literally pull down that Desk Accessory to swap from one to the other.

"Incidentally, one of the advantages of having used the STE hardware here is the fact that the STE hardware includes things like fine picture scrolling over a large region."

So it's not just a plain ST, it's an STE!

"This is deliberately STE hardware to allow things like that, particularly when you're dealing with forms and such. One of the things you might want is a form which is obviously larger than the screen. So it would be quite easy for an applications writer to scan a window across the form using fine scrolling."

Who did the character recognition software?

"Nestor Technologies, using a neural net – an actual simulation of the structure of neurons in biological brains. A neural net is not told how to do it – in fact it teaches itself. In terms of optimisation, this is not strictly a neural net in that they've optimised the structure specifically to deal with this type of information. A much more accurate way to describe a neural net is an extremely complex multidimensional filter. That's how the brain works – it tends to filter in or out particular types of information. One of the side effects of that, particularly in this system, is if your handwriting is shaky or you can't hold the

pen still, the net can still derive the proper input because it filters out irrelevant 'noise' and reads out the pattern behind it."

What was the most difficult thing to do?

"Actually it was the low power circuitry. The thing that took the longest was finding out how to read enough of the information about the system to be able to save the hardware state and power down in the middle of applications for essentially all applications. The hardware actually monitors the load off the disk drive. If that load gets too high, it aborts that procedure and gives the user the option of doing a shutdown. It reads all the hardware, including a few places where you can't actually read the information directly. That's what took a while. It took me about two months and we actually found all the ways to solve it – except one: you can't read (some) Baud rates. We will provide a 'cookie' in the software where users can put the Baud rate so that when you power back up again you can put the appropriate one in."

That's a minor software update...

"Absolutely! But it still means an update. We were trying to do this so they wouldn't have to update. That was actually a goal and it is kept to a minimum. All of the software that's been running on the Pad is unmodified software. We just copied it in and it ran. All the applications you see here were developed on STs, TTs and STEs. It's a fully compatible system."

Is the battery life the same for both the Pad and the Book?

"No, mostly because of the Book's hard drive. The Pad is designed to have a battery life of 10 to 20 hours. The main power control on the Book is mostly the hard drive. Even in idle mode it does tend to pull quite a bit more power than the simple solid state circuitry in the Pad. So my estimate for the Book is five to ten hours."

And the six month standby mode?

"The memory backup is exactly the same for the two machines. So that part's okay. It's only when it's in operation – the disk drive pulls more power than the rest of the Pad circuit does."

Were you hired for this particular project?

"No. I came to Atari a year and a half ago as a new product developer specifically for consumer operations. The Pad is actually conceived more from a consumer's point of view than from a computer user's point of view. The Book was, to be honest, derived from the Pad, not the other way around. I had got the power demand so low on the Pad that we figured it would be very easy to repackage it with a keyboard and a hard drive into a very nice notebook package."

And a very nice package it is. After disastrously short battery life scuttled the STACY, the Book should appeal to anyone who wants truly portable ST power – particularly musicians, for whom the ST is already the machine of choice. And the Pad looks like the perfect computer for people who don't want a computer! stf

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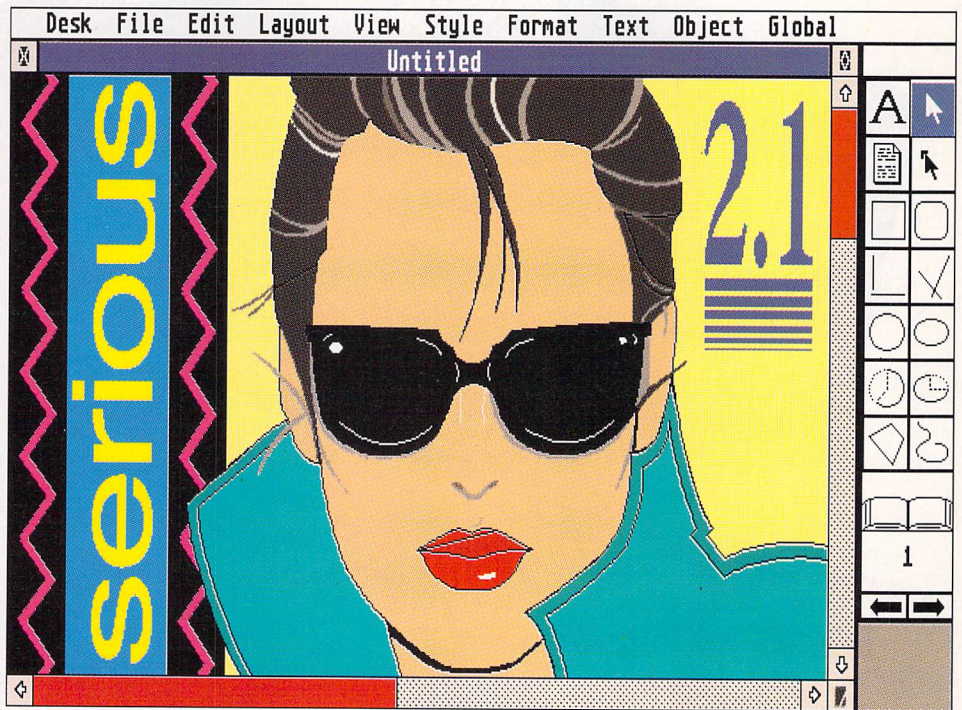
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Actual PageStream 2.1 screen shot. PageStream is ST/STE/TT compatible.

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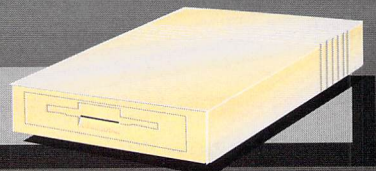
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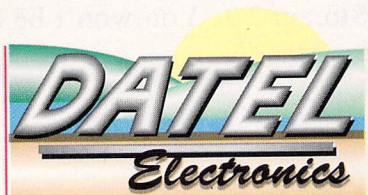
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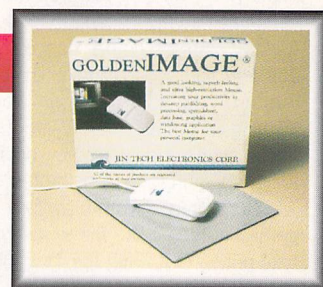
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SCAN 3



L i m i t e d





Get into VIDEO video!

Cue, jog, shuttle, track and review your way into the wonderful world of desktop video. Hollywood beckons for the inspiring video artwork of Andy Hutchinson – the man with a video camera and a SCART lead

Long, long ago, before semi-skimmed milk and vicious one-way road systems came into being, there was television. It ruled the British household until the fateful day when video recorders and home micros appeared in the shops at knockdown prices. The rise of the home micro has been matched step by step by the video recorder, but have you ever considered combining the two?

The applications for "desktop video" are endless, especially since the most important elements in any setup are your ST and video recorder. You don't need much to liberate your defenceless video from *Dick Tracy*, *Police Academy 19* or *Return of the Swamp Thing* and make your own ST-generated videos.

Imagine the scenario. You've written a wicked ambient house dance mix on your ST and you feel you can take the clubs by storm. But how do you get your work recognised? Nothing to it! Plug your ST into the video, stick a house type graphic display on the screen and then dub your song over the top.

Or let's say you've written a superb new game and you'd like the software companies to take notice of it. Plug the TV cable from your ST into the video and play your way through the game, demonstrating all its innovative features while recording the whole thing. You can even dub a commentary over it later on.

What if your sister's getting married and you're called in to man the video recorder for the big occasion? Why not spice the whole tape up by adding some titles, credits, captions and even doodles over the top? Perhaps your school has put in a bid for a large cash donation from a local high technology firm. Why not impress the company (and the teachers) by illustrating the school's needs on your ST? You can use icons,

diagrams and scrolling text, and then dump the whole thing onto a presentation video tape.

THE SCART OF SOMETHING WONDERFUL

Where do you start? The answer is a lead from either a Maplins catalogue (☎ 0702 552911) or your local Tandy shop. If you've got an STFM or an STE you can plug your ST's television lead into the back of the video or use an ST monitor SCART lead for a crisper image. If you own a Mega ST or Mega STE, you must use a SCART cable because there's no built-in modulator.

With the lead in place you're almost ready to start recording your ST's images. But first you must get the ST's signal tuned in correctly. The ST transmits on UHF channel 36, so you need to tune your video using a spare video channel.

Sometimes you get interference from the video itself which makes the picture look fuzzy and the sound crackle. To get around this you need to tweak the UHF channel dial on the back of the video. With a small screwdriver, twist the dial slightly and then try to tune the video channel

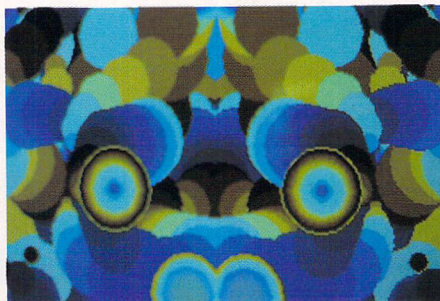
again. You should now be able to get a perfect picture. Bear in mind, however, that you need to re-tune the television to this new channel.

The lead is in place, your ST is up and running and the video's ready. What's next? For starters, load up your favourite game and hit the record button. This demonstrates the kind of sound and picture quality you can achieve with a simple ten quid lead and a bit of knob twiddling. Even so, just watching *Xenon 2* highlights isn't exactly thrilling so let's try something different.

Let's say you've made a home video. Adding some titles to the beginning of the tape takes only five minutes. Just load up your favourite paint package (preferably one with a decent text function), work out what you'd like the titles to say, and type in the text. When it looks attractive enough, flip to "screen preview" so there's no cursor floating around the screen, then hit "record" and "pause" on your video. Release the "pause" button for as long as it takes you to read through the titles, then hit "pause" again. Now you can compose the rest of the titles. Remember, however, to read them slowly to yourself before pressing "pause," 'cos otherwise they tend to whizz past like the credits at the end of American soap operas.

If you have two videos, or a video and a camera at your disposal, you have all you need to do some video editing. This means you can place captions or intro screens in the middle of your work. If the video is of your holidays for example, why not place ST screen shots at strategic points in the tape – when there is a change of location for instance?

We've already mentioned the music video possibilities of DTV. If you're looking for a decent computer-generated accompaniment to your wonderful music, why not try Jeff Minter's



■ Use the psychedelic effects in *Trip-a-Tron* to help you create plenty of stunning images for your video

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Trip-a-Tron (£34.95 Llamasoft ☎ 0734 814478) – a light synthesizer that displays gloriously psychedelic patterns. You can modify these in real time and easily build up a graphic display which reacts to your music.

If you doubt the effectiveness of this kind of video, take a look at the Chart Show and see just how many video promos use exactly this kind of effect. You can even combine a light show, like *Trip-a-Tron*, with video titles and an end credits sequence.

The other option is to use a Public Domain demo creator to do your light show. This could include your own picture, a sprite of your design and your own scroll-text. These programs are

“The applications for ‘desktop video’ are endless – you only need an ST and a video recorder”

available for only a few pounds from PD libraries (see our PD directory, page 100), so you don't have to spend a fortune to make professional looking videos. But if you have got some loot handy, take a look at what else you can do.

GENLOCK ONTO VIDEO

If you ever watch *Top of the Pops*, you're seeing the cutting edge of video mixing technology. You can achieve similar effects by plugging a device called a **genlock** into your ST. This enables you to lay computer graphics – like a chart number or a band's name – over the top of video images. Early STs didn't have the hardware to be able to use genlocks, but that has now been remedied. However, at the moment it's difficult to obtain genlocks in this country, though digitiser giants Rombos say they're working on one. ST-compatible genlocks like the GST Gold 40E are imported from Germany and cost around £250. If you're interested, contact one of the big hardware specialists like Ladbroke Computing (☎ 0772 203166).

As the price of **digitisers**, even colour ones, has plummeted, it is now possible to perform sophisticated effects without spending a fortune. You can digitise a shot of yourself on video, for example, monkey around with it using a paint package and then cut to the real image. TV companies do this all the time. (If you want to know more about digitisers, see page 104.)

Why not try some animation in your video? If you saw *FORMAT's* animation special in issue 21, you know all the tricks (and if you didn't, see page 138). You can create your animated sequence in many of the popular art packages, such as *DPaint* (£49.95 Electronic Arts ☎ 0753 49442) or with a specific animation package such as *Animaster* (see page 44) or *CyberPaint* (£51 Electric Distribution ☎ 0480 496789). Once you've got your sequence, you can record it onto video directly – or plug the genlock in and mix animation with an existing recording.

Most modern video recorders now have a near-perfect pause function so you can splice together almost seamless edits. Don't be afraid to experiment – if you muck it up you can just rewind the tape and start again. You can get away with a lot and produce very professional effects. Forget the BBC! Ignore ITV! The real video experience starts on your own ST! **stf**

There are so many different formats of video around at the moment that you'd think it had been around for years. But video as we know it now – the VHS system – was developed in 1969 by the Victor company of Japan.

Video recorders have circular recording heads placed on a slanted drum. These heads poke out of the sides of the drum and send magnetic information to the tape. The drum is at a slight angle, so that as it rotates it records a diagonal (helical) signal onto the tape. Later on, the tape passes over a standard audio head which can either record or play back audio signals.

Home video editing kits have now found a specialist niche in the High Street market. With these cheap units (from about £200) you can perform many effects – fades on edited images, for instance. When used with new videos (ones with such features as jog and

shuttle controls) you can produce effects that can even match the professionals.

Recently, improved video formats have started appearing – S-VHS for example. These offer better picture quality and vastly improved audio heads and can also provide you with such features as surround sound and synthesised stereo.

For more information on modern video technology, check out *Newnes Guide to TV and Video Technology* by Eugene Trundle. This is available for £8.95 from Maplins ☎ 0702 554161 (Sales) or ☎ 0702 552911 (Enquiries), code number WS34M.

■ If you're having trouble getting hold of suitable leads to hook your ST up to a video or monitor, contact Lightwave (☎ 051 639 5050). They can also give you advice on what kind of cable you need

■ You, your ST, a video or a video camera and a bit of imagination are all you need to get involved in the dynamic and exciting world of video. Just take a look at all the things you can do!





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ST Format "The very best ram upgrade boards on the market"

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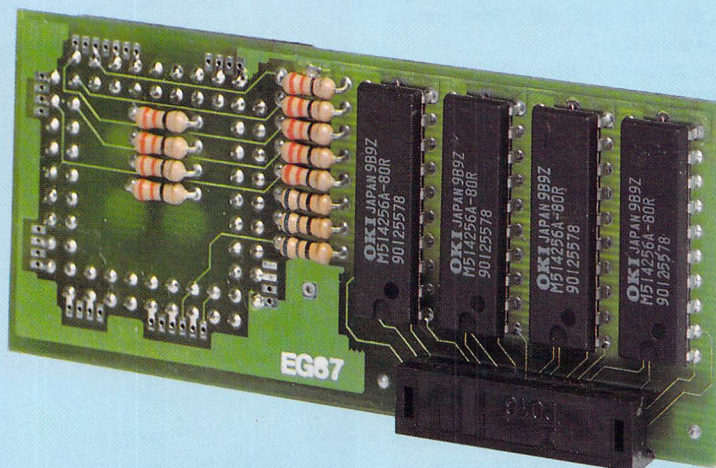
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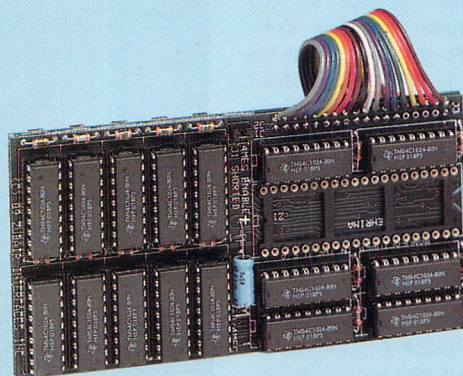
All Third Coast ram upgrades come supplied with a ram checker which checks every chip on the upgrade so you know if you have fitted the upgrade correctly. Also included is a ram disk, print spooler and several other useful public domain utilities.

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For those Atari owners who have a machine with 1/2MB drive and memory we offer a 1MB internal drive and a 1/2MB soldering upgrade kit for the special price of **£99.99**



1/2 megabyte plug in board Atari ST User September 1990
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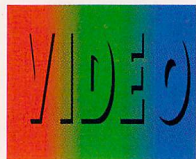
RFI Interference

All Third Coast's ram upgrade boards fit under the RFI shielding so that you get no interference on your screen.

For more information on any of Third Coast's products please return the form below to the address listed at the top of the page.

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Interests:	

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■ You can make your own video soundtrack using either semi-professional gear (left) or a more common home keyboard (right)



Do the dub

The days of silent movies are long gone, so why make them yourself?

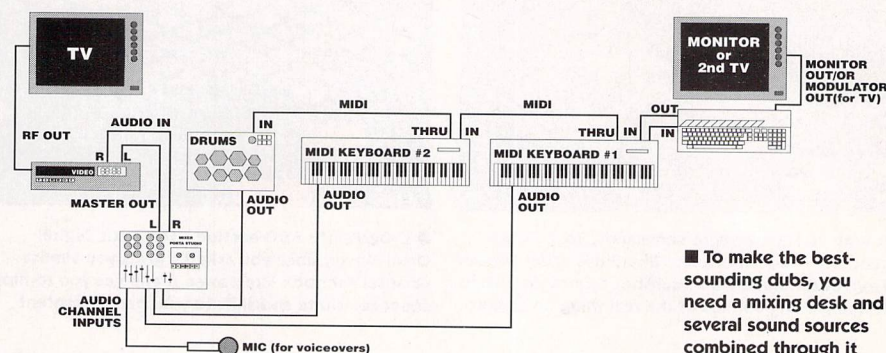
Neil Jackson shows you how to turn your tapes into talkies, ST style

Once you've made your ST-generated video masterpiece, the first thing you're going to notice is its poor or non-existent soundtrack. All the best videos have some form of audio – a narrator's voice, atmospheric music or synchronised sound effects – and if you want people to watch your video, it should have some form of audio too. Soundtracks are just as important as the images because they work on an almost subconscious level.

Setting up for soundtrack making (or audio dubbing, as it's also known) can take a bit of time, and it's worth knowing what you require before you start. There are hundreds of leads, cables and connectors you can join together, but there's nothing worse than setting three-quarters of it all up only to find you're one cable short.

Depending on your make of video, you may be able to dub stereo sound onto your tape. (It's worth checking the manual – they're all different). Most likely it has only one audio input, which is mono, but this needn't be a problem. Firstly, familiarise yourself with the controls you're going to need – audio dub, pause, play functions and input source.

To make the sounds, you need some sort of sound source. This could be a MIDI keyboard, which you can connect to your ST and play remotely, or it may be something more simple, like a microphone (for voiceovers) or just a humble cassette-player. You must make sure that you can connect the output from the device



■ To make the best-sounding dubs, you need a mixing desk and several sound sources combined through it

into the video's audio input socket – microphones and electric guitars often need amplification first or you won't hear very much at all.

Some videos enable you to control the recording level – you set it up so that the sound levels average at 0dB or "just into the red" on most modern level meters. You may also need to tell your video to look to an external source for its sound input rather than a TV channel. If you attempt to dub a soundtrack and end up with Nicholas Witchell wibbling on about the news, then that's the problem – look for the EXT or AUX selector.

For a more professional sound, you may want to use a whole range of instruments, mikes and gadgets to make your soundtrack. The best way to do this is to use a portable mixing desk. Save yourself three or four hun-

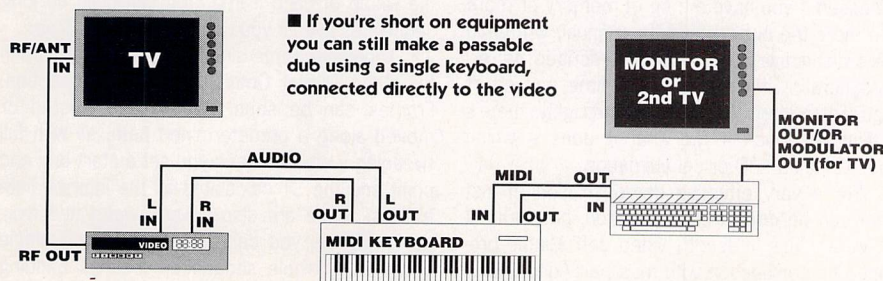
dred quid by hiring one. Check out the music store where you bought your instruments for more information.

When you've connected up the mixing desk to the video the desk performs many tricks:

- It acts as a booster for electric guitars and mikes;
- It gives you the option of adding echo effects and adjusting treble and bass controls;
- It enables you to mix the sounds from all the different instruments.

Rather than attempt to mix all of these onto the video at once, in a "live" situation, you can get better results if you mix-down onto a cassette tape first. That way, you can run the video while you play and re-do the track as many times as required. When you're happy with the tune, mix and levels, you then only need to sync up the beginning of the cassette version and the rest falls into place.

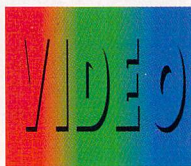
Whatever your setup or budget, there is a way to make your own video soundtracks. Your biggest problem is likely to be the fiddly connectors which manufacturers put onto their videos and keyboards. Don't let this stop you! For every awkward plug, there's an adaptor somewhere. Most decent electronics stores, like Maplin (who run a mail-order service on ☎ 0702 554161) or Tandy, stock all the adaptors and cables you're ever going to need. You can do it! **stf**



■ If you're short on equipment you can still make a passable dub using a single keyboard, connected directly to the video

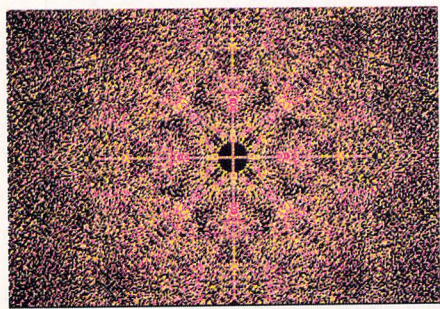
Vidi-soft

Aside from titling your videos, there are plenty of other ST generated effects you can record to give your videos a touch of class. Animation is the obvious choice, and virtually any software that can string two frames together into a sequence can be used to produce it. The main contenders are *Cyber Paint* and *Deluxe Paint*, because they offer specialised animation facilities. If you're after the psychedelic effects favoured by Manchester bands in their videos, look no further than *Trip-A-Tron*. Finally, there's nothing to touch TV Titles for listing the grip, key grip, best boy, etc etc of the video of your family holiday in Majorca.



If you fancy putting your own ST-generated cartoon on tape – or just listing the stars of your last holiday video – you're going to need some software.

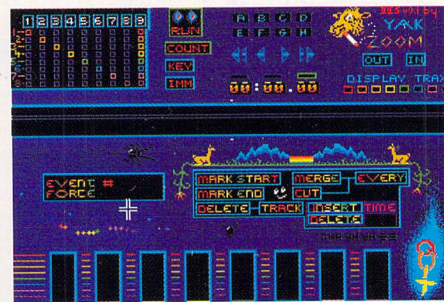
Ed Ricketts rounds up the best "desktop video" packages currently available for your ST



■ With just a few macro commands, your ST can generate complex displays like these using *Trip-A-Tron*. Unfortunately a screenshot cannot do justice to the swirling colours of the real thing on-screen



■ *CyberPaint's* ADO section – the Antic Digital Omni-Mover, since you asked – gives you almost Quantel Paintbox-like power. It enables you to flip, squeeze, rotate and shift to your heart's content



■ The *Trip-a-Tron* Event Sequencer screen may look complicated, but that's only because it is. Learn to find your way around it, though, and you have total control over your psychedelic displays

TRIP-A-TRON

£34.95 Llamasoft ☎ 0734 814478



Written by ace games programmer and full-time hippie Jeff Minter ("Yak" to his friends), *Trip-A-Tron* is a powerful "light synthesiser" for generating lightshows. Unlike a conventional paint package, it is designed to create the visual equivalent of a piece of music, a continuously changing abstract stream of images. Its many features include:

- KML, a built in macro language with which you can run up to eight programs simultaneously, at the touch of a key;
- the VSEQ, or Video-Sequencer, which enables you to flip, rotate (in 3D), distort and generally mess about with a standard screen picture in much the same way as it's done on TV;
- the Event Sequencer, to set up sequences of effects by assigning KML programs to keys and entering them onto a matrix, in a similar way to a conventional music sequencer;
- the Sillyscope, a programmable tool to reproduce the sort of laser effect you get in nightclubs (you provide the smoky atmosphere);
- and the 3D Starfield Generator, for the flying-through-space effect often seen in games.

MIDI is supported, but not in the usual way. You can't input music through the MIDI port and have a display automatically generated in time to the music, because Jeff Minter felt this would be the visual equivalent of a robot playing a

guitar solo. Instead, you can trigger events from a keyboard connected to the MIDI port, or you can MIDHink up to eight STs together and control them all from one slave ST.

Trip-A-Tron can be as complex as you like. If you're not into programming you can get some respectable effects just by using the basic presets and modifying the demos. When you get more confident you can progress to the VSEQ and KML to utilise the full power of the system and generate spectacular displays. A warning

"Trip-a-tron is designed to produce a continually changing abstract stream of images"

though: the more advanced features can only be accessed if you have a meg of memory or more (the more the better); and the manual, written in Yak's distinctive style, is best described as, er, idiosyncratic. If you put in the time and effort required to learn the system thoroughly, there's nothing to touch it for what it does – which doesn't include 3D or cel animation.

For a very effective demonstration of just what can be done with *Trip-A-Tron*, have a look at *Merak*, the full-length video Jeff Minter produced (in conjunction with musician Adrian Wag-

ner) using just five STs linked via a custom video mixer. It's £12.95 from The Music Suite, Cenarth, Newcastle Emlyn, Dyfed SA38 9JN.

STF Rating: 91%

CYBER PAINT 2

£51.03 Electric Distribution ☎ 0480 496666

Part of the exceptional *Cyber* range of products (reviewed in *ST FORMAT* last issue), *CPaint* is mainly designed for touching up 3D sequences produced with *Cyber Studio* et al., but it also has excellent standalone cel animation facilities.

With the range of drawing tools provided, you can draw unaided, frame by frame, or use the traditional animation technique of "blueing" – that is, displaying one frame in a uniform blue colour for you to draw the next frame over exactly, with just the required changes. Because of the system used to store frames, keeping only the changes between them in memory instead of the whole of each frame, you can build up long sequences even if you don't have a hard drive.

There are some similarities to *Trip-A-Tron* in the Antic Digital Omni-Mover or ADO section. Frames can be spun, rotated and twisted or moved along a predetermined path, all with full tweening – which means you set a start and end point and the ST calculates all the intermediate frames. There are also several weird and wonderful effects you can apply either to a single frame or a whole sequence, such as bending

the screen in a sine wave, antialiasing and outlining specified colours, which can produce some interesting results.

If you want to create good old fashioned cartoon-style animation for your videos, *Cyber Paint* is a sensible choice. It has all the features you need and then some – but it's not going to take away the sheer tedium of drawing frame after frame – or turn you into an artist either.

Where it excels is in the movement of lettering. You can prepare your titles using a fancy font (CPaint can use GDOS fonts without needing GDOS itself – Atari's graphics management system – loaded) and then whizz them around the screen quite easily. Unlike with a dedicated titling program, you're not limited to straight vertical scrolling, and with the effects available – such as fade, wipe and venetian – there's the possibility of some mind-boggling credits.

STF Rating: 80%

TV TITLES

£25.00 (inc P&P and manual)

Caledonia Public Domain Library ☎ 0463 225736



If you want the scroll-em-up of the standard credit sequence, your best bet is to go for this STOS-written program, dedicated to producing – well, TV titles. It does everything you'd expect and a bit more besides, with the exception that it can't create the titles in the first place. This is a bit of a disappointment, especially considering the price.

It also means you need at least one other art or font package to make full use of it. You must prepare static screens using a conventional paint program, then import these into *TV Titles*,

where you can apply various effects: scroll, yer basic bottom-to-top shuffle, as seen at the end of most TV programs; fade, a gentle transition between screens; Venetian, which, as you might expect, generates a Venetian blind effect; or the more exotic fades, like Spiral, Dissolve or Wipe. Colour shifting is possible, as is flashing (ahem).

If you want to try out the program before buying, check out the Cover Disk demo with issue 20 – but beware, it's not STE compatible (though the full program is). If you missed that issue, see page 138 for ordering information.

STF Rating: 91%

DELUXE PAINT

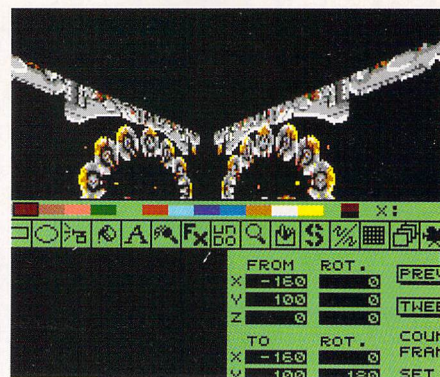
£59.99 Electronic Arts ☎ 0753 49442



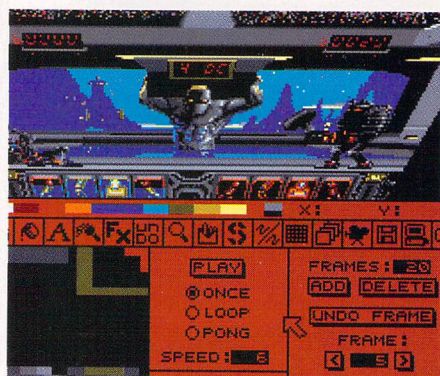
Though it's known more as an excellent paint package, *DPaint* also has some sophisticated animating options. Its features are similar to those of *Cyber Paint*: you can draw frames individually by hand or take advantage of the tweening facility to move parts of your design smoothly over several frames. 3D rotation is also possible, together with resizing and the usual animation effects.

DPaint's animation suite is so like *Cyber Paint*'s there's little to choose between them. *Cyber Paint* does have some extra image processing skills, though it's doubtful whether these are genuinely useful in the production of a video sequence. In the end, it's probably the conventional art features which make up your mind, and the *FORMAT* Gold winning *DPaint* shines in that regard. For a comprehensive review and useable Cover Disk demo, see *FORMAT* 15.

STF Rating: 96%



■ 3D effects are easily created in *DeluxePaint* by using the imaginary Z dimension – if Y is up the screen and X across it, Z is "into" it, away from the viewer – to move a frame at an angle away from you



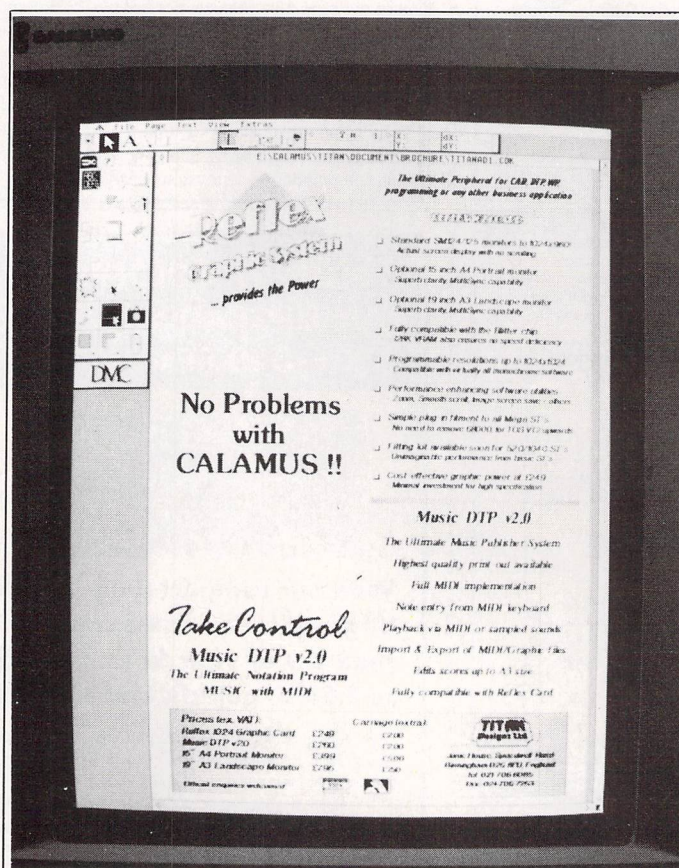
■ More frame flipping in *Deluxe Paint*. You may not find it as easy to use as *Cyber Paint* because of the way rotations and movements must be set up, but there's certainly plenty of power available

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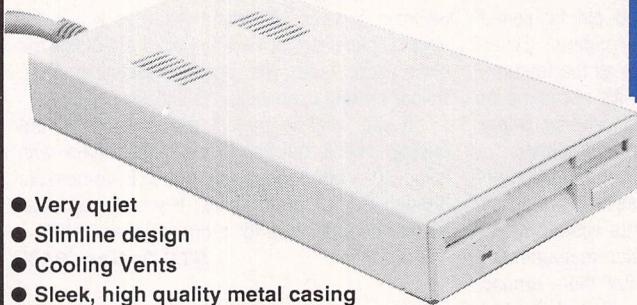
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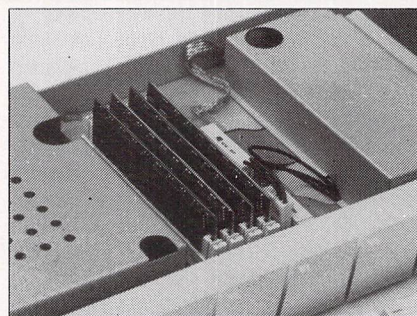
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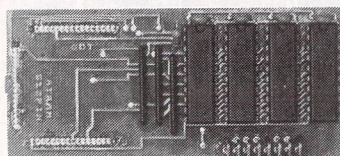
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N.B. Due to the large variance in design of the Atari ST, there is a small minority of boards in existence which may require a little soldering.

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£179.00 Certified 'FORMAT GOLD' Refer to the Jan. 1991 issue of ST FORMAT

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With its dedicated monitor input, this model combines the advantages of a high quality medium resolution colour monitor with the convenience of remote control Teletext TV - at an excellent low price! NEW Version features dark glass screen for improved contrast, plus full range 3-way speaker sound output.

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TOTAL RRP OF EXTRAS: OVER £115.00!

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ALL OUR ST prices include mouse, user guide, etc. PLUS 5 Double Sided disks full of specially selected Public Domain software including paint program, two wordprocessors, games, graphics & sound demos, desk accessories and utilities.

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Special new package including the Atari STE, now available at a special new price! Includes the STE with 1Mb Drive, 512K RAM, full digital stereo sound, PLUS extra software including:

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Lattice C 5.06.02	£ 115.00
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Star LC 24-10 24-Pin, 4 fonts, 180/60cps	£ 215.00
Star LC 24-200 24-Pin, 5 fonts, 200/67cps	£ 249.00
Citizen Swift-24 24-Pin COLOUR PRINTER	£ 279.00
Atari SLM605 6 ppm, 300dpi laserprinter. Quiet in operation (requires 2Mb RAM minimum)	£ 899.00
Olivetti JP350 Superior 300 DPI inkjet	£ 389.99
Olivetti DM100S 200/30 cps 9-pin. SPECIAL PRICE includes 12 months on-site maintenance	£ 115.00
Panasonic KXP1123 24-Pin printer	£ 215.00

NEW! olivetti DM124C Professional 24 Pin COLOUR Printer



PROFESSIONAL QUALITY 24-PIN COLOUR PRINTING NOW AVAILABLE - AT AN AFFORDABLE PRICE!

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ST FORMAT COVER DISK 24

ATOMINO
Start splitting the atom with this exclusive and hair-raising playable demo of the new puzzler from Pysgnosis

LLAMATRON
Now dig out the green wallees to collect base-d sheep in our complete and exclusive version of Minter's well-known shoot-'em-up

Get programming in assembly with part 3 of the Bullfrogs' guide
REVENGE Automatic document reader, printer and decompiler
FLU Find out how to spot virus symptoms – without getting infected
LITTLE GREEN SELECTOR Ouch the usual ST Reselector and use this sophisticated replacement version instead
WP TOOLS Versatile accessory to give you more power in 1st Word

ALL PROGRAMS STE COMPATIBLE

Disk format by Rob Northern

Cover

Side 1

ATOMINO – Particle puzzles galore in Pysgnosis' molecule-mixing game. Get up and atom!

LLAMATRON – Exclusive! Special ST FORMAT versions of Jeff Minter's stunning new shoot-'em-up, for both 520 and 1040 owners. They're baaaaa-d!

REVENGE – Tired of your tatty TOS text? Get your revenge and do documents dynamically with this incredibly fabbo file-viewer

DIY ASSEMBLY – Part Three of the Bullfrogs' easy-to-follow assembly guide really brings out the

violence in you. Shoot to thrill!
(Hey, nice phrase...)

Side 2

FLU – What can a virus do to you? Find out the hard facts the safe and easy way

LITTLE GREEN SELECTOR – File-finding need never be the same again. LGS does all the hunting work for you, while you take it easy

WORD PROCESSING TOOLKIT – Put extra power into 1st Word with this sweet Accessory



ATOMINO

BY: PSYGNOSIS

SIDE: 1

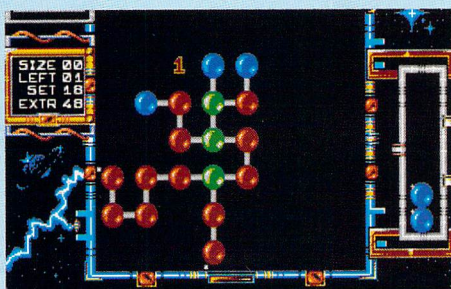
MACHINE: ALL COLOUR STs

FOLDER: ATOMINO

FILES: DEMO.PRG

Pysgnosis' *Atomino* is the nearest you'll get to having fun with molecules! In your lab, you have two significant items: your particle-space and your test-tube. The particle space is the place where you link atoms together. The test-tube connects to a particle-accelerator which separates the atoms and deposits them into the test-tube.

An atom is simply a blob of electrically-charged matter with a number of negatively charged electrons. If two spare electrons from different atoms come together, the atoms link. Each atom can link to as many other atoms as it has free electrons. To position an atom, just move the joystick to the desired



■ *Atomino* gives you the chance to don your "aren't I clever?" hat and have a bash at making molecules. It's almost exactly the same as the physics they taught you at school – remember the electro-valent theory? – but who cares when it's this much fun!

position in the particle-space and press "Fire." The current atom, the one at the bottom of the test-tube, is then dropped into that place.

The cursor changes to reflect the number of electrons available on the next atom (which drops down the tube) and the process continues. You can place a new atom on top of one that's already positioned, providing the old one is not a fixed atom. Thus you can redesign your overall molecule until there are no spare electrons left on the chain. When that happens,

the molecule is removed. Depending on the level, you must make two whole molecules, or one of a predefined shape, or one in a confined space. When the tube's full, the game's over.

Just set your machine to low res and double-click on DEMO.PRG to begin. You can select music or sound effects (or both) using the joystick. "Fire" toggles the selected option. When you select Game, use the "Fire" button again to advance each screen when you've read the instructions.

FLU

(Version 1.30)

BY: GEORGE R. WOOD-SIDE (PUBLIC DOMAIN)

SIDE: 2

MACHINE: ALL STs

FOLDER: FLU

FILES: FLU.DOC, FLU.PRG, FLU.RSC

Flu demonstrates exactly what happens to your ST when certain disk viruses are picked up and reach their "deadly" phase. However, it displays the effects without causing any damage – you are the antibody, and it's up to you to take note of the effects and keep an eye open for any real attacks!

The program runs in any resolution, so just double-click on FLU.PRG to run it. The FLU.RSC file must be in the same directory for it to work properly. Several ST virus strains are examined – just click on the virus type you want to see. Weird things may happen to the display – some older STs may even crash – but no actual damage is done to either the ST or the disk.

By looking at these effects you'll now know if you ever see the same effects (when you're *not* running *Flu*) that you probably have a virus. Prevention is always best so have a virus-killer handy.

For further information about the virus-types, read the FLU.DOC file, by double-clicking on it and selecting SHOW, or viewing it with *Revenge*, also on the Cover Disk.



■ Beware the mutant llamas! Dodge the gobbling brains and watch out for those killer joysticks! Things go completely hatstand in *Llamatron*, the game which turned the crowned heads of Europe into raving lunatics. We're talking far out, dudes!

■ Coke is it! So run like crazy or you'll be "it" too! Collect the lost-looking sheep to earn bonus points, and kill all the nasties to move to the next level. Warning! There is nothing here which is illogical – everything is looney – so llook out – llamamania!



LLAMATRON

BY: LLAMASOFT (SHAREWARE)

SIDES: 1 & 2

MACHINE: ALL COLOUR STs

FOLDER: LLAMA512 (Side 1) and LLAMAMEG (Side 2)

FILES: READ_ME.TXT and

TRON_512.PRG (Side 1)

TRON1MEG.PRG and

SCORES.YAK (Side 2)

Llamatron is a belter of a game, created by everyone's favourite boffin, Jeff Minter. It's a fab joystick-controlled shoot-'em-up, featuring a

wealth of llamas and sheep! It's simple to play and as addictive as hell, but before you play, read on.

If you own a 520ST, you must use the TRON_512.PRG version. Copy this from the folder on side 1 onto the root directory of a blank, formatted disk (that is, not in any folders). If you have a double-sided disk drive (and can read side 2) copy the file called SCORES.YAK from the LLAMAMEG folder onto the same blank disk. This file contains a

Disk 24

REVENGE

(Version 2.01)

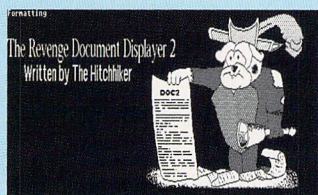
BY: THE HITCHHIKER (PUBLIC DOMAIN)

SIDE: 1

MACHINE: ALL STs

FOLDER: REVENGE

FILES: DISPLAY.TXT,
REVENGE.PRG



■ *Revenge* displays your documents and enables you to view them easily

Revenge is a super-intelligent document viewer which can make file-reading a dream. Everyone knows what a pain it is to read a document file in low res – you can't scroll backwards if you miss a bit, and often half the display whizzes off the top before you can read it. *Revenge* can help!

To use *Revenge*, just double-click on REVENGE.PRG. The pro-

gram loads and displays a neat intro screen where you select the file you wish to view. *Revenge* loads it up, formats the text for you and displays it on-screen. You can move backwards and forwards through the text simply by moving the mouse up or down. What could be simpler?

Revenge can also handle document files which have been packed

using the *Pack Ice* compression program (available in the Public Domain). It de-crunches them when they're loaded and then displays them like normal documents.

For further information from the programmer, covering all the features in-depth and a history of the program's development, double-click on the file called DISPLAY.TXT. Alternatively, why not load up *Revenge* first, and use it to show the DISPLAY.TXT file and all the other document files on this month's Cover Disk?

THE KEYS TO REVENGE

Arrow keys	Scroll up or down one line
<Shift> + Arrows	Scroll a page at a time
<Shift> + Function Key	Set a "bookmark" in document
Function Key	Move to a preset "bookmark" position
<Enter> or <Return>	Scroll down one line
Spacebar	Scroll down a page
<Control> + T	Set the tab widths
Zero key	Toggle between 50 or 60Hz display (colour only)
Zero key	Reverse the screen colours (monochrome only)
<Tab>	Display the pop-up menu
<Undo>	Quit back to the Desktop
<Alternate> + T	Move to top of document
<Alternate> + B	Move to bottom of document
<Alternate> + G	Move to a specific line
<Alternate> + F	Search for a phrase
<Alternate> + N	Find next occurrence of phrase
<Alternate> + S	Mark the start of a block
<Alternate> + E	Mark the end of a block
<Alternate> + H	Hide the block
<Alternate> + C	Set up the printer configuration
<Alternate> + P	Print the whole document
<Alternate> + W	Print only the selected block
<Alternate> + L	Load a document
<Alternate> + X	Run another program
<Alternate> + Q	Quit back to the Desktop

LOOK AT THE SIZE OF IT!

Every month, *FORMAT's* Technical Ed sets to work on the world-famous Cover Disk. Requiring more coffee and fags than any other magazine's disk to put together, this is, as they say in technical circles, big. This month there are eight folders packed with goodies for you.

OLD-FASHIONED SINGLES CLUB?

Things went a bit awry with the first STs Atari ever made. The drives they fitted could read only one side of a disk. Yes, it is a bit daft, but it gets worse. The old-fashioned "singles" couldn't even begin to read a double-sided disk. At least, not until *ST FORMAT* put its best brains on the problem...

ANYONE CAN USE IT

Rob Northen was an unknown genius living in Surrey, until he created the first *ST FORMAT* Cover Disk. Now he's a world-famous unknown genius living in Surrey, and his legacy is an amazing disk formatter that enables everyone to read at least the first side of the Cover Disk. No-one need be left out. We guarantee that this disk can be read by all STs, no matter how old or new.

DOUBLE THE FUN

If your ST is younger than three years old you should be able to read everything. To get access to the second side of the Cover Disk just double-click on the folder named SIDE_2. It should open up a normal window, listing all the files contained on Side 2.

IT WON'T OPEN?

If you have a single-sided drive and you try opening the SIDE_2 folder, then you see an alert box. You're told that the data on the disk may be damaged. This is just your ST's way of telling you it can't read Side 2. Don't fret, just click on CANCEL and you'll be okay.

TROUBLE-FREE DISK DRIVING

Whatever your ST set-up, you can't afford to take risks. *FORMAT's* Cover Disk is guaranteed virus-free – our duplication master disks are tested personally by the Tech Ed. However, if the write-protect tab on the disk is left enabled (closed), then viruses can get onto the disk. Protect your Cover Disk as soon as you buy it, by opening the tab and backing it up. It's the only way to be absolutely sure you're safe!

SHAREWARE? WHERE? THERE!

You may have noticed (here and in READ_ME.TXT) that *Llamatron* is Shareware. This is the first time a complete, full-price-style game has been released in this way. What does it mean? Well, you are entitled to copy, distribute and give away copies of *Llamatron* to your heart's content. No problem! In fact Jeff Minter would like *Llamatron* to spread all over the world! All he asks is that if you like the program and play it more than once, you send him a fiver. He reckons that most people will do this, and in return for their honesty he promises to send them a free *Llamatron* poster, a Llamasoft Newsletter and an extra, free, complete, classic game; *Andes Attack*. Wow! Now there's a reward! Surely that's worth a fiver if anything is?

As far as *ST FORMAT* is concerned, we know what you should do if you like *Llamatron* – send Jeff the cash. If you don't like it, don't destroy it. Give it away! Maybe the next person will like it enough to send in the dosh. If you like it and play it but don't contribute, two things will happen: (a) you'll die a horrible, lonely death and (b) Jeff (and loads of other top-class programmers) won't write any more Shareware stuff. It'll be your loss – and every ST game-player's.

But most importantly – Jeff and *ST FORMAT* want you to have fun. So read the READ_ME and play the game! It's incredible – you'll see!

high-score table. It's not essential to use this one, because *Llamatron* creates a table if it can't find one. However, ensure that your working copy of *Llamatron* is write-enabled (with the notch closed) or it won't be able to save your high-scores at all.

If you have a 1040ST, then use the TRON1MEG.PRG file. Copy this to a blank disk along with the SCORES.YAK file, again leaving the disk write-enabled so the high-scores can be updated. The

1MByte version features much better sound-effects than the 520 version. It uses samples which have been severely cut in size to fit into the 520ST version.

Also in the LLAMA512 folder, you can find another file, READ_ME.TXT, written by Jeff himself. In it you can find everything you need to make *Llamatron* more fun – as well as some "software history." To read it, just double-click on it – or use *Revenge*, also on this Cover Disk.

LITTLE GREEN SELECTOR

(Version 1.4)

BY: CHARLES F. JOHNSON
(SHAREWARE)

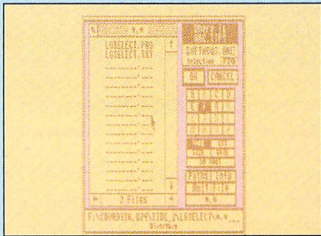
SIDE: 2

MACHINE: ALL STs

FOLDER: LGSELECT

FILES: LGSELECT.TXT, LGSELECT.PR

Little Green Selector is a replacement for the ST's GEM fileselector, the box which pops up asking for a filename when you're loading something from inside another package. We've all cursed GEM's less than helpful version at one time or another, when it decides to ditch out or get hopelessly lost when you change a disk. *Little Green Selector* can put paid to all of that, as well as providing a wealth of really useful features.



■ The standard Atari GEM dealt with file-selecting like a blind man choosing paint. Now you can see the light with the *Little Green Selector*, a program you can install to give your ST a superior grasp on your data

LITTLE GREEN FEATURES

Little Green Selector enables you to do all these handy things:

- Sort files by order of name, extension, size, disk order or date
- Show all files (*.*) or specific file types (*.DOC, *.PRG or whatever you choose)
- Store 18 user-defined pathnames (like c:\myfolder\yetmore*.DOC or similar) which can be recalled at the touch of a button

- Show hidden or system files which exist but are not normally displayed in the directory window
- Save all your defined paths, templates and extensions so they're auto-loaded next time you use *Little Green Selector*

- Clear everything (paths, extensions) at the touch of a button
- Operate by either keyboard or mouse commands
- Communicate with Codehead's *Multifile* accessory and *MultiDesk*
- Display the sizes of files as well as their names
- Change drives with a single button press
- Flush out the folder counter to avoid the 40-folder bug (only TOS 1.0 and 1.2 STs suffered from this ROM fault)
- Execute fast file-searching to locate files in well-stuffed folders

With this much to offer, *LGSelect* is bound to be of use to everyone, no matter how old your ST is. However, the *Little Green Selector* is a Shareware program, and as such it's slightly different from normal PD stuff. Check out the *Llmatron* panel on page 39 for more info on Shareware. Basically, if you decide that you like *LGSelect* enough to keep it, you really ought to pay the programmer, Charles Johnson.

For more data on operating *LGSelect* double-click on the file *LGSELECT.TXT*. Inside are all the instructions you need, plus a contact address for Charles himself.

FAULTY DISK?

In any disk duplication process as earth-shatteringly large as *ST FORMAT*'s, it is possible that a tiny proportion of disks might be faulty. If you're unlucky, sorry. You're guaranteed a replacement if you send your disk, enclosing an SAE, to: *ST FORMAT* July disk returns, PC Wise Ltd, Unit 3, Merthyr Industrial Park, Pentrebach, Merthyr Tydfil, Mid Glamorgan CF48 4DR.

Llamas in your disk drive? Atomic piles? Call the...

COVER DISK HOTLINE

0225 442244

WEDNESDAYS (2pm to 6pm)

If you're having trouble with your Cover Disk, you need someone to turn to. The Cover Disk Hotline provides you with a direct link to the *ST FORMAT* offices, where you may find the answer to your problems.

Before you ring, please make sure you have thoroughly read all the relevant parts of these Cover Disk pages and all documentation files. If that doesn't solve your problem, try consulting your Atari ST Owner's Manual, which may help you find what you're doing wrong.

If all else fails, give us a buzz during the hours specified and we'll do our best to help. However, we don't write the Cover Disk programs ourselves, so we may not know everything the programmers do. Try to have the ST nearby (up and running), and let us know which model ST you have, plus the issue number of the Cover Disk that's giving you all the hassle. Do this before you call, and it might save you a large phone bill when we tell you to go back and find out!

WORD PROCESSING TOOLKIT

BY: SANDY JANAS (PUBLIC DOMAIN)

SIDE: 2

MACHINE: ALL STs

FOLDER: WPTOOLS

FILES: WPTOOLS.DOC,

WPTOOLS.ACC,

WPTOOLS.RSC



■ Feeling a little lost in *1st Word*? How about a few more features to make word processing an easier and quicker task? They're all here in the *Word Processing Toolkit*, and you don't even need a WP!

The *Word Processing Toolkit* is primarily designed for use with *1st Word* or *1st Word Plus*, but since it's an Accessory you could use it with anything. To use it, copy *WPTOOLS.ACC* and *WPTOOLS.RSC* to the root directory of your boot disk, or the disk you boot *1st Word* from (preferably a backup). Reset your ST and you find *WP Toolkit* tucked away in the Desktop's Desk menu. To access the program, select it from that menu.

More information can be found in the file *WPTOOLS.DOC*. This is a *1st Word* file, so to read it you can load it into that word processor. You can also just double-click on it to SHOW it to the screen, but the display looks a bit strange, because of the *1st Word* control characters contained in it.

INSIDE YOUR TOOLBOX

The *WP Toolkit* offers eight functions for you to use:

● AN ALARM CLOCK

To set the alarm, just click on *ALARM* and then enter your chosen time into the dialogue box. Hit <Return> and the display reverts to the main panel. At the appropriate time, a window opens up on top of the screen display, informing you that the alarm has gone off.

● A PRINTER SELECTOR

The printer selector enables you to choose your printer emulation mode, output quality and paper style, just by clicking on the appropriate buttons. You can then alternate between two setups (or two printers if you're lucky enough to have them) for draft and final quality printouts.

● A WORD COUNTER

You can use this function to add up the number of words in a document. Choose the desired document from the fileselector and away it goes! The number of words is printed on screen when it's calculated.

● A FREE RAM CHECKER

Clicking on "FreeRAM" interrogates the ST to find out how much space you have left for your document. If you don't have much memory left, you can save a bit of space by disabling the *WPTools* Accessory and resetting your ST.

● A DISK RELABELLER

Use this helpful function to change the current disk's volume name. Just click on the box and enter a new name. It's saved

to the bootsector of your disk and you can check it using the Show Info command. It's just a handy way of knowing what disk you have in the drive.

● A DISK FORMATTER

The "Format" option enables you to prepare a new blank disk from within the word processor you're currently using. *1st Word* was unable to do this, so *WP Toolkit* can stop you from losing newly-entered data when you find you've got no space to save it and no blank disks spare.

● A FILE RECOVERY TOOL

"Undelete" is a smart way of retrieving old files which have previously been dumped into the trashcan. It may not be 100% successful, especially if you have saved data to the same disk since deleting your file, because this can over-write the file's datablocks. However, it may still be able to retrieve a fair portion of the data you've trashed, so it could save you having to type it all in again!

● A SCREEN BLACKOUT TOOL

The "Blackout" button turns the screen black to save wear and tear on the phosphor dots on the TV tube. Prolonged exposure to the same screen display can cause the dots to become discoloured and a faint, ghostly image of your wordprocessor screen is "burned" onto the screen forever! You can stop this by using the blackout option when you're away from the machine and it's not switched off. Press <Return> or <Enter> to get the display back.

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Clear accessories out of your root directory and into a folder which MultiDesk will automatically load from. Create saveable Set ups of frequently used accessories. Runs as a program, or an accessory. Can be installed into Hotwire to run accessories from the desktop.

LOOKit & POPpit

Two powerful and useful new utilities for the price of one!

Lookit is an ASCII file viewer and additionally a powerful binary file editor. Amazingly, you can even open several files and cut and paste from sector to sector!

Poppit lets you "Hotwire" your desk accessories and "pop it" up within any GEM program with a keypress! Naturally, it finds accessories you've loaded with Multi-Desk too!

CODEKEYS

Codekeys records all key strokes and mouse clicks and plays them back either with precision timing, or as fast as possible. Both GEM and non-GEM! Automatically loads the correct macros for each program, and with the correct screen resolution. Creates time-controlled that play at set times or set intervals. Built-in editor to fine-tune macros. "Nest" macro option.

X-BOOT

X-Boot is a new program from Germany. It runs at bootup time and gives you a menu of default configurations to select the correct auto programs and accessories for your current work session.

You can also load the correct GDOS set up to run with the chosen program, copy set up files, perform batch file operations and auto-start the programs of your choice.

X-Boot is very easy to install and has a clever GEM-like front end. You can either point and click, or hit pre-defined f-keys.

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- ★ Ever wanted to increase your floppy disk storage capacity?
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Both models also work perfectly as single and double density drives, and are compatible with IBM emulators. They also run as external drives on the TT.

The drive is either available as an internal unit for fitting into computers or towers, or as a cased external unit with its own built-in power supply. Either way, DIY or workshop fitting of an interface is needed. The drives come complete with full fitting instructions and are available only from the Atari Workshop. Prices are as follows:

Uncased internal drive kits (inc VAT)	
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DIY ASSEMBLY GUIDE (Part Three)

BY: GLENN CORPES

SIDE: 1

MACHINE: ALL COLOUR STs

FOLDER: BULLFROG

FILES: SPRITE16.DAT,
SPRITE32.DAT, SPRITES.S

This month you can find all the files for the DIY assembly guide (see page 95) in the BULLFROG folder. SPRITES.S is a source-code file for HiSoft's *Devpac 1* and there are two sprite-data files. First load the SPRITE.S file into *Devpac 1* (yours free on Cover Disk 22 – see page 138 if you missed it). *Devpac*

1 can be loaded in high or medium resolution, but *not* low. Once it is loaded, reset the tab size to 4 so you can fit all the lines on-screen. The bottom entry of the furthest right-hand menu contains the TAB control. Just change the number from 8 to 4 and hit <Return>. Then load up the SPRITE.S file, using the "Load File" option in the File menu.

Your screen is now full of program lines. Follow the guide on page 95 to find out what you can safely do. When you want to create an executable program file, select the "Assemble" option from the right-hand menu. A dialogue box

then asks you for a BINARY FILE-NAME and offers a choice of output displays. If you want to save the complete file to disk, enter a name; if not, just leave it blank and *Devpac* attempts a dummy assembly to test the program. To see the source file as it's being scanned just select "screen" (or "printer").

After a final assembly (saving to disk), you now have a new file. Copy this to the same folder as SPRITE16.DAT and SPRITE32.DAT or the program can't find them and can't run. And to be sure you don't ruin your Cover Disk, remember to do *all* your work on blank disks.

THE DISK NEEDS YOU!

We need *your* software – games, utilities, demos – anything good, original and preferably short. If you've written anything worthy of the *ST FORMAT* Cover Disk (and remember, only the best will do), send it with this form and full documentation to: Neil Jackson, *ST FORMAT* Cover Disk Editor, 30 Monmouth St, Bath BA1 2BW. Allow at least four weeks for a reply.

Name _____

Address _____

Daytime phone _____

Program title _____

Size of files in K _____

What's so brilliant about it _____

Don't forget to: ■ Include on-disk and paper documentation ■ Write your name and address on the disk ■ Use a virus-free disk ■ Keep a copy of your program, because contributions are non-returnable

Please sign the following declaration: This program is submitted for publication in *ST FORMAT*. It is wholly my own work and I agree to indemnify Future Publishing against any legal action should copyright problems arise.

Signed _____

Note: we pay out up to £800 for contributions to our Cover Disk. But to earn that kind of dosh, of course, you'd have to write something pretty spectacular, original and complex.

BACK UP YOUR DISK!

Because the *ST FORMAT* Cover Disk is non-standard, the back-up procedure is not simple. Follow these steps and you won't encounter any problems. Do it any other way and you could mangle your Cover Disk.

1. Format a couple of blank disks (you may not get all the data onto one) – single-sided if you've got a single-sided drive, double-sided if you have a double-sided drive.

2. Write-protect (notch open) the original Cover Disk and insert it into the drive (if you have two drives, insert the Cover Disk into drive B). Double-click on the drive B icon to open a window showing the Cover Disk contents. If you haven't got a second drive, a message appears requesting you to put disk B in drive A. Simply click on OK.

3. Insert one of the blank formatted disks into drive A (removing the Cover Disk if you have only one drive). Double-click on the drive A icon and open up another window. You may be asked

to insert disk A into drive A – you just did, so just click on OK again.

4. Highlight each folder in the drive B Cover Disk window and drag them into the drive A window, one at a time.

5. If you have one drive, you're asked to insert disk A and disk B at regular intervals. Don't mix the two up! Disk B is the Cover Disk and disk A is the freshly formatted disk.

6. When you get a "disk full" error message, recopy the incomplete folder and any subsequent folders onto the second freshly formatted disk, using steps 3 and 4 above.

7. Double-sided owners, double-click on SIDE 2 once you've finished copying all the folders from side 1 of the Cover Disk. Copy the folders inside as above. When done, use only the back-up. Put your Cover Disk away safely.

8. Don't forget, you must not try to use the standard Atari disk copy (dragging floppy A onto Floppy B) function – it won't work.

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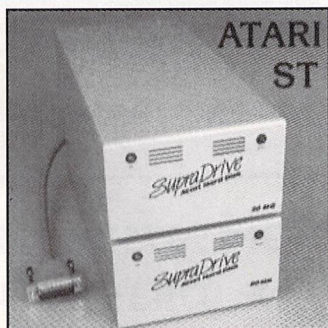
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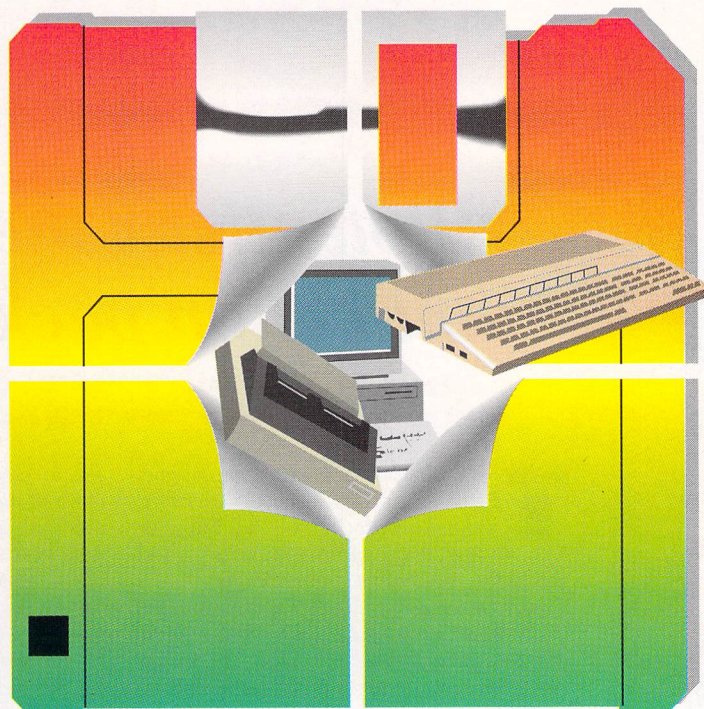
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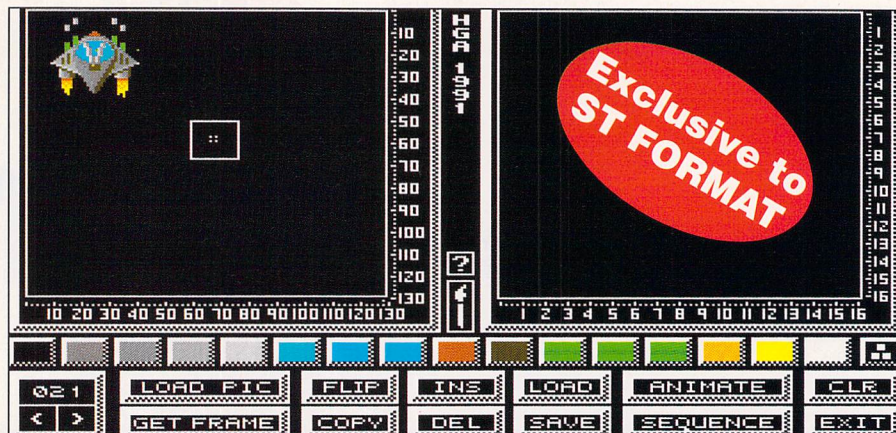
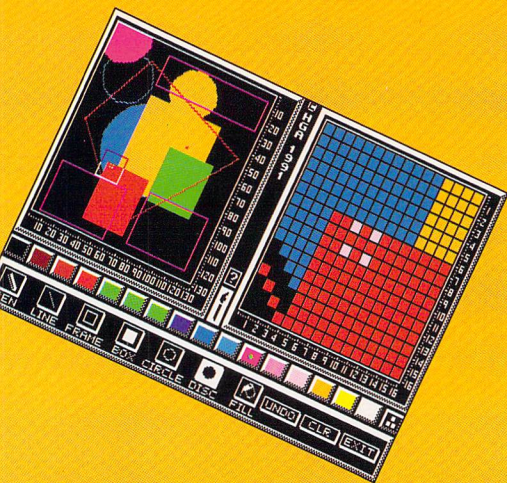
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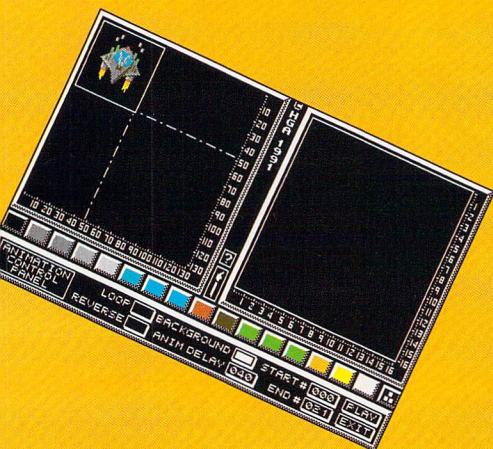
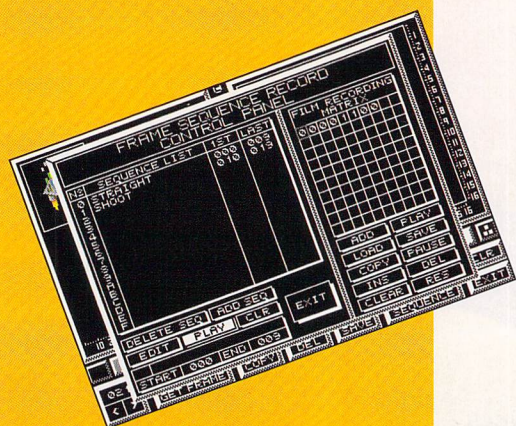




Get animating with Animaster!

“Potentially the best ST animation package”

– Peter Molyneux, creator of *Populous* and *Powermonger*, after using last month's Cover Disk demo



That's what professional game-designer Peter Molyneux said about *Animaster*. You can't overlook praise like that when it comes from the programmer who created hit games like *Populous* and *Powermonger*.

Animaster is *ST FORMAT*'s exclusive and unique animation package which enables you to design your own animated sequences. You can create your own sprites in *Animaster*, load in backdrops and then make your characters run, leap or die over the top of them. Save your sequences to disk and then merge them together to build up a short cartoon. Using a GFA Basic program supplied as part of *Animaster*, you can even incorporate the sprites into your own BASIC programs.

A taster of *Animaster* appeared on Cover Disk 21. The full version of the program enables

you to create and edit your sprites using a range of drawing tools. You can then test them over the top of a background to see how they look. What's more, *Animaster* even makes use of the enhanced features of the STE, offering you a choice of 16 colours at a time from a staggering palette of 4,096.

Using *Animaster*'s powerful sequence editing features, you can construct a short "film." For example, define a sequence showing a little man running, then another showing him leaping and yet another showing him bending down and touching his toes. Using a special recording matrix, you could then define a "film" which shows the sprite running for a while, stopping to touch his toes, running again and then leaping into the air. Imagine the possibilities for a Superman sprite or a colourful Mickey Mouse!

ANIMASTER PRIORITY ORDER FORM

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Note: *Animaster* is only available through *ST FORMAT*

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ANIMASTER'S FEATURES

- Runs on any ST or STE, with support for the STE's extra palette of 4,096 colours
- Automatic creation of a special mask to use your sprites in *GFA Basic*
- Single or multi-frame "grabbing" from pictures created in a paint package
- Eight times magnification for close-up editing of your sprites
- Extensive sprite drawing and editing features
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- A unique sequencer enables you to define up to 16 animation sequences which can then be animated over a blank screen or any picture of your choice
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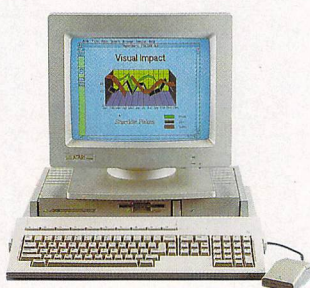
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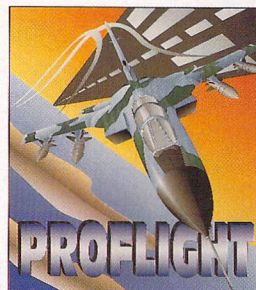


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protars' 40 DC, 80 DC and 160 DC models are additionally equipped with a 64 kB cache memory integrated on the hard disk; this cache memory reduces disk accessing times by up to 50%.

Some other examples of protars' hardware include:

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Screenplay

In a world gone mad, there's one thing you can rely on. It's not the Six O'Clock News. It's not Ian McCaskill inanely warbling "helloo!" It's not even those ticket machines you get outside car parks where you need an arm at least seven feet long to reach the darned ticket. No – it's **Screenplay**, your **FORMAT** guide to the sexiest games around

LEMMINGS

After a long and somewhat puzzling wait the game of the nature documentary is here. The lemmings are cute, cuddly, utterly stupid, and you've got to take care of them. Who on earth wants to be a lemming-minder (whatever that is)?

page 51



THE STF RATINGS SYSTEM

- It is **ST FORMAT** policy to review only finished games – that is, the games you could actually buy in the shops – never incomplete or demo versions
- We review *all* games released, but only when they're finished. We will not be rushed into reviewing unfinished games to beat our "competitors"

GRAPHICS: A score out of ten for the quality of visuals and animation, including how big and colourful the sprites are, how smooth the scrolling is, and so on.

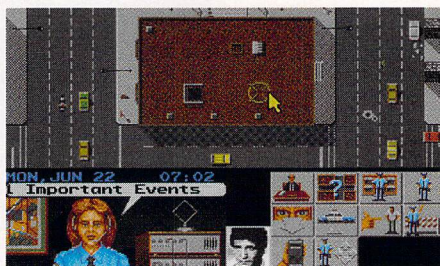
SOUNDTRACK: (out of ten) Sampled sounds are realistic and rate highly but ST sound chip noises tend to send your eardrums convulsing

INTELLIGENCE: (out of ten) How clever do you need to be to tackle the game? Puzzle and strategy games should be tough; few shoot-'em-ups are mentally taxing

INSTANT APPEAL: (out of ten) You take the game out of the box and drop it in the drive. How well does it draw you in? How easy is it to get into?

LONG TERM INTEREST: (out of ten) You've had the game for a couple of weeks. Is it covered in dust, in the bin or still in your drive?

OVERALL: (a percentage) Terrific graphics and wonderful sound make a game look hot, but they don't make it great. The overall score comes after joint discussion between the **FORMAT** reviewers and depends on the quality of the gameplay and its long-term appeal



HILL STREET BLUES

Still sobbing uncontrollably because the series with the melancholy theme tune and no discernable plotline has finished? Long to hear the words "let's be careful out there" just one more time? Boy, are you in luck!

page 54

STORMBALL

You've followed its development in the **FORMAT** articles, you've played the Cover Disk demo, you've seen the ads. Put yourself out of your misery and see what *Stormball's* really like

page 60



WONDERLAND



Mad Hatters? Cats with a visibility problem? Magnetic Windows? That's right – you've entered the Twilight Zone. No, wait – it's *Wonderland*, the mind-bending new puzzler

page 48

MEGATRAVELLER 1

Another one of those huge and complex board games (which you've probably never heard of) that has millions of players worldwide. On an ST near you right now

page 67



■ The **FORMAT** crew: master hypnotist Ed Ricketts (left) demonstrates his skills to tortoise Dan Goodleff (centre) and constipated ostrich Neil Jackson (right)

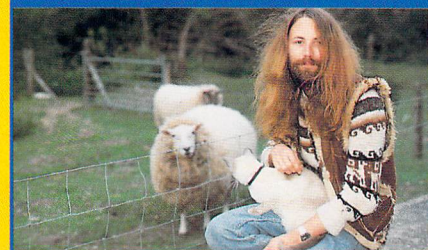
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THE YAK'S TOP 20

Ace, cool, wonderful and altogether groovy games programmer Yak (AKA Jeff Minter) picks his most, like, fab games in our extremely mellow Top 20 (man)! **page 74**



Over 25 games cracked on page 77 – Make yours the *Final Battle* ● Tactical advice for *Carrier Command* ● Lighten up *Shadow of the Beast* ● Codes to *Chip's Challenge*

VIRGIN MASTERTRONIC £30.64

Wonderland

An Alice in Wonderland adventure game sounds good, but if you're late for a very important date you can't spend hours typing in awkward phrases. Ed Ricketts asks whether Wonderland's new control system is one to lose your head over

Remember those good old text adventures? "You can see a light." GET LIGHT. "You can't see a light." Ah, those were the days – spending hours trying to get the parser to understand CUT ROPE, and even longer working out that it was only capable of understanding DESCEND THE CRAGGY RAVINE and not CLIMB DOWN.

Well, those days have gone, and good riddance to them. Adventurers nowadays want to be taxed by the puzzles in the game, not the game itself, so Magnetic Scrolls have pro-

duced the game with absolutely no idea of what your goal might be, but you soon find out. Falling asleep and

"The control system is arranged to make playing the game as straightforward and intuitive as possible"

starting to dream, you leave your sister Emily behind on the river bank and wander off into a pear grove,

where all the pears suddenly turn into lanterns. Pick a lantern – you need it later – and find the rabbit hole. From there on in it's a case of exploring, collecting and discovering.

What makes the game really interesting is that there are two ways of executing commands. You could play the whole game

simply by typing everything in as normal, or you could make use of all the accessory windows. Instead of typing EXAMINE PEAR, for instance, just double-click on the pear in the Items in Room window. Then if you decide to pick it up, drag its icon to your inventory window. It's as simple as that. If there's something in the graphic that looks interesting, click with the right mouse button on it to bring up its description. Everything has been arranged to make playing the game as straightforward and



■ The most commonly used commands, like Examine, Get and Use, are in the pull-down menus, and helpfully list only the objects that particular command applies to – no more messing about trying to GET PROSTHETIC and suchlike

duced Wonderland, a user-friendly adaptation of Alice in Wonderland. It's liberally sprinkled with windows, icons and such like, so you should feel at home right away – er, in theory.

You begin



■ Not before time, The Adventures of Alice in Wonderland comes to your ST, albeit with a shorter title. Find your way through the twisted logic of Lewis Carroll's classic book, but be warned – there are many new puzzles to fox even hardened Alice fans

intuitive as possible. But be warned: although Wonderland is capable of running perfectly happily on a bog-standard 520ST, on this machine you have only the Session and Graphics windows available – there just

isn't enough memory for the full range explained in the box below.

EFFECTS

A great deal of effort has been put in to make Wonderland look as attrac-

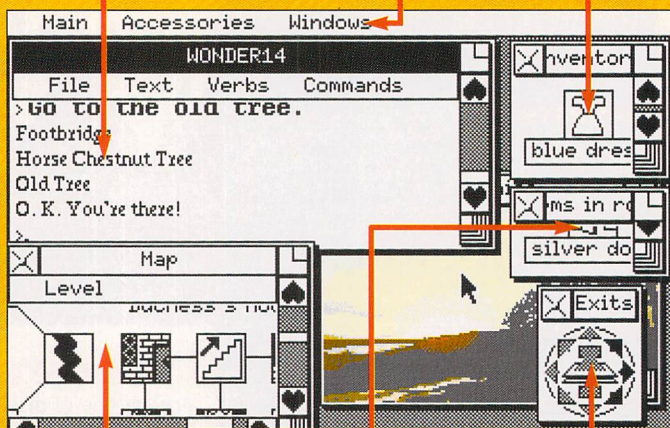
ALICE IN WINDOWLAND

Wonderland is the first game to use Magnetic Scroll's new adventure control system, Magnetic Windows. This aims to give you a familiar working environment – with windows, icons and menus – which you are used to from the ST's GEM Desktop. These windows feature all the standard properties: you can move, resize, close them and so on

Session window – displays your input and responses. Scroll up to see a limited amount of past input. You load and save games or input common commands via pull-down menus

Menu bar – provides a variety of functions, such as help, loading and saving a particular layout of windows and setting miscellaneous preferences

Inventory window – For a description of any object, double-click on it. To pick something up, just drag its icon from the Items in Room window to this window



Map – shows the places you've visited and the exits from them. Click on a location to move directly via the shortest route or see its graphic

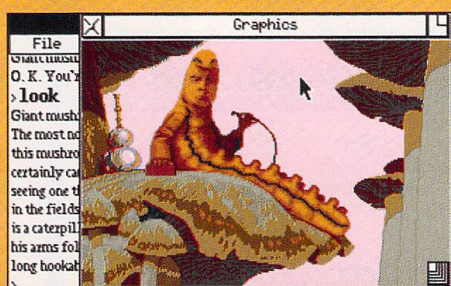
Items in Room – this window – er, displays the items in the room. For a description of any item, you can simply double-click on it here

Exits – a quick visual indication of which directions are available from where you are. Click on a highlighted arrow to move that way

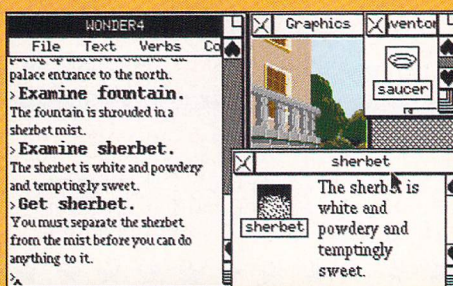
OOER – MAGIC MUSHROOMS AND SHERBET

The puzzles in *Wonderland* usually aren't too taxing, though in the spirit of the book they're not always strictly logical. Hardcore Lewis Carroll fans may

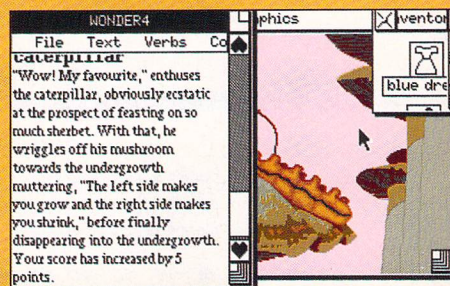
be disappointed: most of the time it's just a case of finding the right object from an area you haven't explored yet to solve a problem elsewhere



■ Wandering past a walled garden – wonder what's in there? – you come across this extremely laid-back caterpillar sitting on a huge mushroom. A quick examination reveals that he's smoking sherbet from a hookah – that dubious-looking device – and that if you get him some more he may very well help you



■ Luckily, you just happen to know that there's a sherbet fountain not too far away. It's the work of a moment to click on the map to get there, but to your dismay you find you can't just take any sherbet from the fountain. Try rummaging through your inventory to see if there's anything useful. Aha – a saucer...



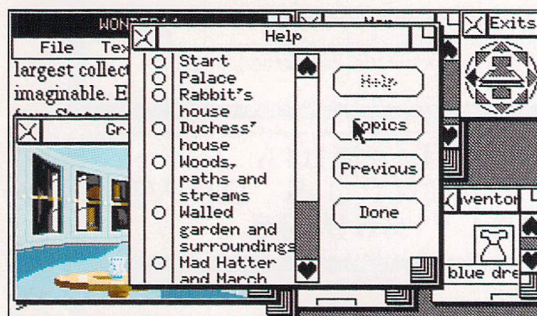
■ Having successfully procured a little sherbet, you take a quick trek back to the hippie insect and offer him the powder. That seems to do the trick, because he's wandered away with it, muttering interesting hints about the mushroom and leaving it to you. Now if you can only find something to cut it with...

tive as possible. There is a graphic of some sort for almost every location and most of them are very well drawn. Animated scenes are scarcer but always excellent: streams gurgle smoothly by and frog henchmen

the occasional sound-chip tunes can best be described as adequate.

VERDICT

It's quite a brave step for Virgin to attempt to introduce a new adventure



■ If you ever do get really stuck you can always resort to the built-in help feature. This offers hints in varying levels of significance, from a fairly cryptic clue to the complete solution of a problem. However, it's not a good idea to rely on this too much. Naturally, the game keeps count, so the more you access the feature the more your score suffers

march up 'n' down. You can even choose between four fonts and many sizes of text, though you really need to be in high res for the best text output – and this means sacrificing the colour graphics. It's a boon to find sound in *Wonderland* as well, though

game more manageable, though there are still times when it's quicker to type in a command than fiddle about with icons. There is an initial familiarisation period during which you must accustom yourself to the system

and arrange your windows as you like, but once you're past that you can concentrate on the game. Having the map and being able to move

"There's a well-drawn graphic for almost every location, and animated scenes are excellent"

straight to a location cuts out much tedious typing; however, there is a danger that you can become distracted and spend more time playing with the windows than with the game itself.

One of the major drawbacks is the constant pause for disk accessing which grows almost unacceptable when a long graphic sequence is loaded. Hard drive users should be pleased to hear that the whole game may be installed – uncompressed graphics

and all – onto one partition, but the vast majority of game-players don't have this luxury.

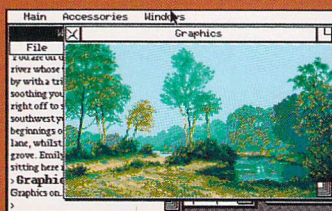
As adventures go, *Wonderland* isn't terribly difficult – and even if you do get stuck there's always the help function (if you can bear the guilt). On the whole, then, a success, but not quite in the *FORMAT* Gold category. Doubtless there will be improvements to Virgin's Magnetic Windows adventure control system, and maybe future Virgin adventure games might make the grade once these have been implemented. For now, a sound and highly absorbing first attempt.

ED RICKETTS

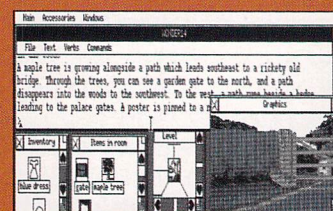
GRAPHICS	8
SOUNDTRACK	3
INTELLIGENCE	7
INSTANT APPEAL	8
LONG TERM INTEREST	9
OVERALL	85%

A FINE DISPLAY OF RESOLUTION

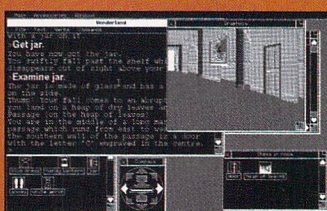
Wonderland is playable in any of the ST's three graphic resolutions. Each one has its pros and cons, so the mode you finally choose to play in may probably be completely different from the next person's



■ Low res is the best mode for those who want to see the pretty graphics, because it offers you the ST's full range of 16 colours on-screen at one time. The only problem is that it's very difficult to fit all the windows on-screen in the limited space available



■ Medium res offers far more scope for arranging your windows, though here too there are drawbacks. The graphics are only displayed in grey scales, not colours, and some of the fonts look too tall because of the odd proportions of the medium res screen



■ High res is ideal for those serious adventure buffs who hold no truck with these new-fangled graphics but like to see a lot of text. The fonts look about a hundred times better and you can fit most of the windows comfortably – and legibly – on-screen

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Lemmings

Lemmings. Aren't they stupid? Famed the world over for throwing themselves off high places for apparently no reason whatsoever, they're the losers of the animal world.

Unfortunately, in the game of the same name, you've got the task of rescuing them. You do this by endowing certain lemms with

special powers. If, for example, there's a hole in their way, you have to get one of them to build a bridge over it, or otherwise the rest of them blindly stumble over the edge because they're so brain-

less. The aim on each level is to get the specified number of lemms home safely by any means possible.

Hazards are many: fire spews from the walls, chasms yawn on every side, poison goop threatens to engulf the unwary lemming that falls into it (lemms, as any fule kno, can't swim) and time is running out. But soldier on – the lemms are depending on you.

EFFECTS

Considering the size of the lemings sprites it's quite amazing that they're so well animated – literally only a few pixels high, they display more character than most silicon heroes ever do, even down to the way their hair flies about when their heads turn. Keeping them small means being able to animate more on screen at once at a reasonable

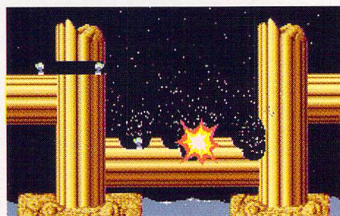
speed, though there is some doubt whether it's possible to see them clearly enough if you're playing the game on your grandad's 1952 televisiongram – only a good monitor really does them justice. Some of the backgrounds are quite

spectacular too. It's the same old story, though: sound has sadly been forgotten. When you play the game, you get the option of choosing between moronic repetitive tunes or simple beeps and clicks – the latter is preferable if you want to retain a modicum of sanity.

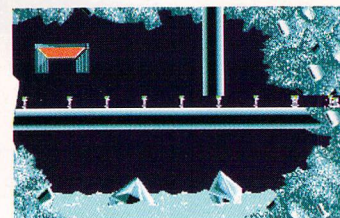
VERDICT

Lemmings is damn near perfect. It has all the ingredients of a classic game: simple rules, massive playability, enjoyable graphics and that indefinable something that draws you back again and again. The only major drawbacks are the lack of sound and the potential illegibility of graphics, but neither of these makes the game unplayable. Get into the world of *Lemmings* and you'll never want to come out again.

ED RICKETTS



■ If you ever get stuck in an unwinable situation, use the Nuke icon. Bang go all the lemings in a pretty spectacular display of animal pyrotechnics. If you're really bloodthirsty you can even do this just to watch their little heads explode



■ Do you think you've got the poise to control up to 100 suicidally stupid lemings all hell bent on throwing themselves off the nearest cliff? Here's your chance to prove it in *Lemmings*



■ Even after you've sussed out a level you may still find it hard to complete. It's easy to run out of time 'cos it takes a while to set everything up – and damn frustrating to have to do it all again



■ Here there are two solid walls in your way. How do you get through them without any Bashers? Simple – place a Blocker right next to a wall and blow him up. He takes the wall with him

THE LEMMING'S GUIDE TO ICONS

Along the bottom of the screen are the icons you use to control all the individual lemings. The number above the icon shows how many times you can use it for this level – sometimes you can't use it at all.



Decrease flow of lemings – though not below the initial rate

Increase flow of lemings – though not above 99

Climber – give a lemming the ability to climb vertical surfaces

Floater – enables a lemming to fall for long distances

Bomb – explodes a single lemm after a countdown. This is the only way to remove Blockers

Blocker – er, makes the chosen lemming block the way, dunnit

Bridge Builder – this makes a lemm build an upwards-slanting diagonal bridge of 12 steps

Basher – this makes a lemm dig horizontally through a surface

Miner – makes a lemming dig a diagonal tunnel till it eventually comes out... somewhere

Digger – similar to a Miner, but the lemm digs down vertically

Pause – pause. Gives you time to explore and plan strategy

Nuke – blows up every lemming. Useful for hopeless situations (and great fun to watch)

Map of the whole level

GETTING HOME THE LEMMING WAY

Lemmings is arranged into four stages – Fun, Tricky, Taxing and Mayhem – each composed of 30 levels. Though you could go straight to the Mayhem stage, it's best to start on Fun, 'cos the earlier levels are very easy and guide you through the complexities of the control

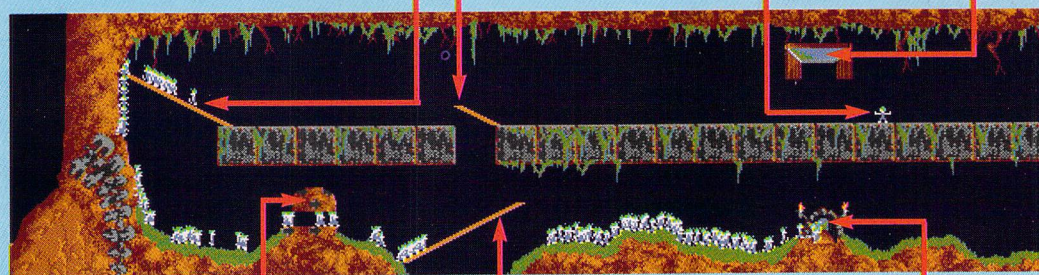
method. Complete a level successfully and you're given its password – invaluable when you want to play level 30. On this level from the Tricky stage (over two screens wide), you have a full crew of 100 lemings on the loose and you must get 93 of them home – not many to waste!

4. Several bridges have to be built here, until there's just a tiny gap for the lemms to fall through. They don't die because of the protruding wall

3. Make one lemm build you a bridge across this chasm

2. Put a Blocker here to stop them falling off the drop to the right

1. Lemmings drop from here



5. Lemmings get trapped here. The arrows on the rock mean you can only dig one way – fortunately it's the right way. Use a Basher lemming to burrow through it

6. Then there are just a few more bridges over here and they're home and dry

7. Home. No, you couldn't just dig straight down here – the platform's solid steel

GREMLIN £25.53

Supercars 2

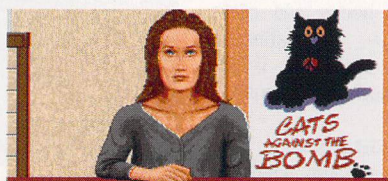
Remember that abusive driving arcade game where you were rated a granny if you didn't come up to scratch? Supercars 2 shows that this genre is still going strong. It's a straightforward racing game played on a variety of small circuits and has you winning money in races in order to spice up your car with all manner of helpful techie gadgetry.



■ **Supercars 2** is a straightforward overhead racing game with a few novel extras. Earn cash for your skill and wipe out your driving enemies with a grim arsenal. The better you get, the harder the courses become, complete with bridges, crossovers and other perils – including a sprinkling of crazy drivers

There are three levels in all – Easy, Medium and Hard – and each level has seven circuits of increasing difficulty. You don't get just plain driving surfaces either – snow, rocks and sandy terrain can really hamper your abilities as a pro driver.

What's more, there are plenty of other drivers who'll stop at nothing to grind you into the ground – literally. You start out with a limited arsenal:

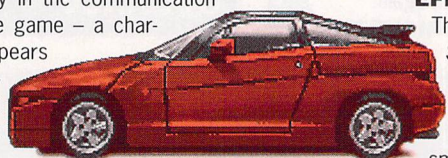


■ This trendy butch feminist is one of several gruesome characters who throw questions at you between races. Get it right and you can double your earnings. Get it wrong and she goes off in a huff with your money – but you can then blow up a few cats to irritate her...

simply a couple of missiles, which you activate by pushing your joystick either forward or backwards.

If you manage to qualify for a race, then you can gamble your winnings away in the communication part of the game – a character appears in the display and asks you a question.

Select the correct answer out of the three provided and you can make a hefty bonus on your earnings. Give a wrong answer and you lose your cash. If you've got anything left, you can do some on-the-spot repairs, buy yourself some weaponry for your car



EFFECTS

The circuits in Supercars 2 are very attractively designed and the scrolling is smooth enough.

Even so, the car sprites, while well animated in themselves, are decidedly bland. Even in two-player mode

or invest in some armour to lessen the effect of collisions.

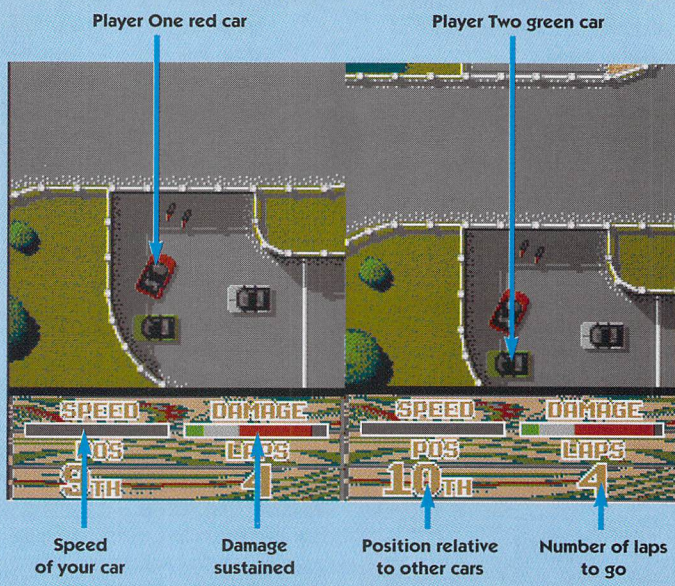
You can get homing missiles that gently remove the opposition, or super missiles which spin about your car and destroy anything in their path – even mines! Unfortunately the other drivers all have access to the same gizmos. Racing just isn't what it used to be!

There is also

a simultaneous two-player mode which uses a split screen display – you can battle with a mate and laugh manically as you drive him to the edge – and over it.

DOUBLE THE FUN

Supercars 2 is far more enjoyable with two players. The split screen display works very well most of the time, although in a hard race it can get confusing



there are no distinguishing features to highlight other drivers – just the same drab grey car sprites. The other racers could have done with a hell of a lot more personality. Sound is poor – no samples, just burbling rev noises and an irritating intro tune.

VERDICT

The two-player mode is this game's saving grace. It makes up for the general lack of individuality among the other drivers.

There is far too much disk accessing between races as well, which slows the whole pace of the game down. The communication screens seem totally out of place and rely

more on luck than skill – a bit of an unfair way to treat a driving fan who's just there for the thrills of the race.

Supercars 2 is still attractive, though, because it introduces a fun combative element into the game without ruining the basic idea of racing. It doesn't claim to be anything stunningly original, but at least it doesn't call you a granny when you come in last.

DAN GOODLEFF

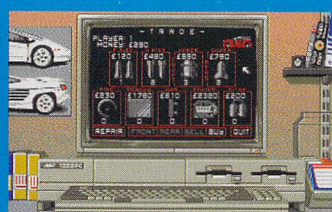
GRAPHICS	7
SOUNDTRACK	5
INTELLIGENCE	5
INSTANT APPEAL	7
LONG TERM INTEREST	7
OVERALL	74%

LEARNING TO DRIVE

It doesn't take too long to get the hang of the controls. Just push the joystick left or right to rotate the car and press the Fire button to accelerate. However, you can only have two offensive weapons per race, so choose carefully.



■ On the Easy level at Bagley Marsh and there are five laps to do! You've just launched two missiles at a driver who's going to regret coming so close



■ You made it! Now it's on to the inventory screen where you can make repairs and select armaments for your car. Protective armour is also available



■ Now you're at Bwlchdydd with six laps to negotiate. You're using the super missile which destroys anything within the radius of its rapid swing

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Welcome to the Hill Street Precinct, I'm SGT Esterhaus. I will process all the criminals



■ **ESTERHAUS:** "But first I'd like to take this opportunity to thank the team that made it all possible: my agent from Film Flatfoots Incorporated, my scriptwriter and my wife, whose years in the SWAT team gave me so much material to work with"

Life is tough in downtown Chicago. There's a mugging every five minutes in the Hill Street Precinct, serial killers roam the streets hunting for prey, and drug dealers peddle their wares on the side-

walks. In *Hill Street Blues* you take the role of Captain Furillo, the mild-mannered and perpetually troubled police chief responsible for law and order in the Precinct, and under your command you have nine officers to do the leg-work of capturing criminals. However, your brief is broader than just nicking the bad guys. You must

not only keep the streets clean but do it without the general public even being aware of the continuous battle against crime. Ordinary Joes cannot be delayed by wailing Black'n'-Whites

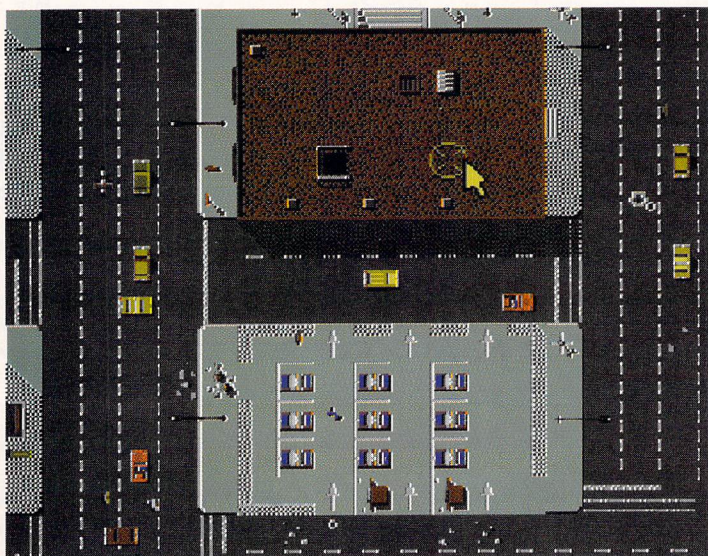
clogging up the traffic, and Mrs. Mahoney doesn't want to see bullets flying when she's out buying her apple pie. It really is a tough life!

The game features a control system rather like that of *Sim City* and has a similar (but more detailed) map, criss-crossed by long straight streets intersecting at 90 degrees. There are around 150 "blocks" in the Hill Street area, all under your jurisdiction. At any one time there is room for one block on the screen, so the whole city is rather large and difficult to cover.

Below the street display are the main control icons you use to direct your officers. To the left is the radio operator who passes on the details of crimes as they are reported. Using her infor-

HILL STREET BLUES

"Hill Street Blues opens your mind to the difficulties a real copper must face"



■ **BELKER:** "HQ? This is Belker. I've just found a whole bunch of stolen patrol cars in a car park off Bellevue Drive. What should I do?"

FURILLO: "Belker! Learn to read a map, ya dumb hick! That's the Police parking lot and I can see you from the window of my office. Sheeez!"

KRISALIS £25.53

Hill St

If you combine the complexity of the TV series and the depth of *Sim City*, what do you get? A sprawling game with 150 blocks of ceaseless criminal activity, that's what you get. Neil Jackson tries out life in Captain Furillo's office

mation you can decide which cop to assign to each crime and where to send them.

To tell your officer where the destination is, you use a map of the whole city which you select using one of the icons. Assign an officer to a specific crime, enter it into the computer in your office and a yellow finger appears on the map pointing at the appropriate block. Select automatic mode and the officer travels to the location under his or her own steam, or you can direct your personnel by hand in manual mode.

Depending on the distance from the Hill Street Station House, an officer can either walk or drive. Walking is a much better idea if the scene of the crime is within about five blocks, since Hill Street has a rather frustrating one-way system which slows down vehicular travel.

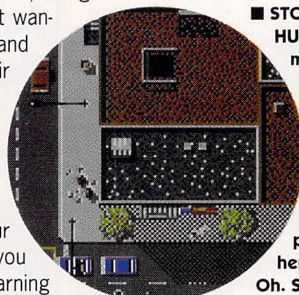
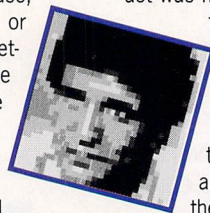
When you've got there, it's time to hunt for criminals among the Hill Street population who appear on the street display. If you have a description of the miscreant and he happens to be in visible range, then a set of red arrows shows the guilty party. If he's an unknown assailant, things are less easy. You must wander up to passers-by and take a good look at their faces. You can radio a description back to HQ, then compare them to the mugshots you may have on file. If you're pretty sure you have your man (or woman) then you can either issue a warning (sometimes effective with small-



■ **HUNTER:** "Bleep, bleep, fsssst, this is Hunter, at the junction of Fourth and Main. Have located the old lady whose dog was fouling the park. I've got her surrounded and the SWAT team is standing by. Er, is it shoot-to-kill or what this week?"

time hoods) or make an arrest and drag the perp back to the cells. Wrongful arrest doesn't do much for your reputation, though, so make sure you get it right!

Assuming you manage to find and arrest the right people, the case may still not be solved. If the criminal act was murder or drug-related, then the defendant has to go to trial. The officer responsible for the arrest must be free for the day to appear in court and identify the suspect. If he's out on another case, or messes up the ID parade, that's it. The suspect goes free and cannot be re-tried for the same offence. However, most criminals usually re-offend, and you may be able to catch them later - but next time, our felon may be a little less likely to "come quietly" and might attempt to



■ **STORMIN' NORMAN HUNTER:** "Yes, gentlemen. This is the headquarters of my counterpart in Hill Street, and you can see the ventilation shaft at the top. The Paveway Laser-Guided bomb will penetrate through here and... er, what? Oh. Sorry. Wrong game..."

reet Blues



escape, this time perhaps even using weapons to help him.

For real tough cookies, Officer Hunter has a hotline to the SWAT team. You can cordon off the block while they go marching in to dislodge the holed-up hoodlum – then call in the paramedics to clear up the mess and scrape the innocent bystanders off the sidewalks.



EFFECTS

Hill Street Blues is a difficult game to master, and even more difficult to succeed at. The odds are stacked against you and you need very quick reactions to deal with many crimes at once. You can multi-task between all nine of your officers at once, which can make things a bit confusing. Who nicked whom? Where is he now? Who's next in court? And so on.

Graphically the game isn't up to a whole lot, but it is interesting from

"The odds are stacked against you – you need quick reactions to deal with so much at once"

an "ant-farm" point of view. Cars whizz by, pedestrians wander around and motorcyclists tear down Main Street. The animation is smooth enough, but there are some occasional sprite-collisions which leave you wondering whether it really is possible for a biker to get side-wiped by a police car and survive.

Controlling the game is simple enough, once you commit the menu system to memory and know how to get to the various sub-menus. However, the mouse-click action seems to be frustratingly delayed sometimes, and some functions are selected by the right button rather than the normal left one. Why?

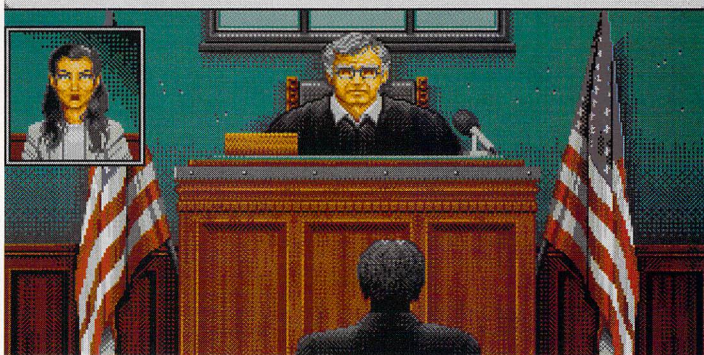
The opening soundtrack to the game is a rendition of the *Hill Street*

Blues melody, but it's a bit lifeless. Some of the original tune's counter-melodies and subtle discords do not sound very pleasant when rigidly pushed through an ST soundchip.

VERDICT

Hill Street Blues is an absorbing game, for several reasons. Like the TV series, it really does open up your mind to the difficulties high-ranking

Peddling Drugs . How do you plead ? Guilty or not guilty ? My client pleads NOT GUILTY.



■ JUDGE: "Not Guilty? Now don't take the p**s. The guy was caught in broad daylight with a whole packet of mouth-freshener and a pair of mirrored sunglasses. He must be guilty. Now stop wasting the court's time – I want to go for a drink"

coppers must have to face in their day-to-day lives. The unceasing activity going on in *Hill Street*, both criminal and legitimate, enhances the feeling of being (almost) in control of a real, living, breathing metropolis, which in turn makes the game a little on the addictive side.

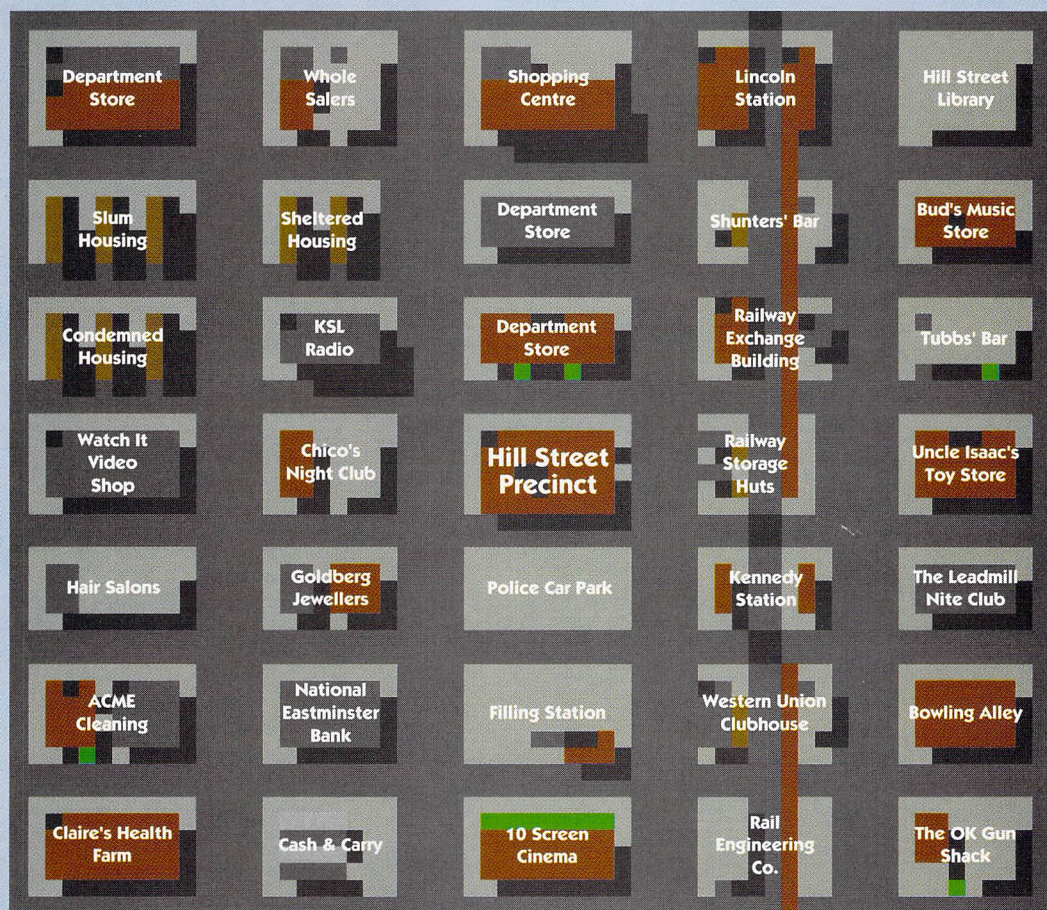
Doubtless, *Hill Street Blues* isn't everyone's cup of tea. There are no high-drama action scenes or jazzy sound-effects to amaze you, but there is a solid game which gradually

unveils its many secrets as you play it through. Worth a look if you found *Sim City* even remotely interesting.

NEIL JACKSON

GRAPHICS	8
SOUNDTRACK	5
INTELLIGENCE	8
INSTANT APPEAL	7
LONG TERM INTEREST	8
OVERALL	83%

A MAP FOR ALL REASONS



■ Hill Street is a vast place, with oodles of space to lose criminals in. To help you, here's a map of the area surrounding the precinct house – about a quarter of the whole game area – with the placenames used by AJ, the radio dispatcher

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Jahangir Khan's world championship squash

Squash is (a) a very silly game, (b) played by yuppies and (c) now available on your ST in the form of *Jahangir Khan's World Championship Squash*. Jahangir, in case you're wondering, is the World Squash Champion six times over – so he's pretty good.

The rules of squash are quite simple. You and your opponent must wang the ball at a certain height against the end wall of the court and not let it bounce more than once on the ground. Playing it well, however, isn't so easy. You need to be reasonably fit to position yourself and return the ball in such a small court. You also need to hit it accurately.

Playing this simulation isn't easy either. For the first few games you run about like a decapitated chicken and only after some heavy practice do you start to anticipate where the ball is going to end up. *Squash* gives you the chance to play isolated matches against single players or to take part in a Tournament. You can also just watch matches if you're too tired to play even simulated squash. Tournaments come in two sizes: a Club version, in which the local lads take you on, and a Championship version in which you become Jahangir himself. Squash clubs are apparently arranged in rungs on a ladder, with each rung consisting of a certain number of players. The more you improve, the higher up the ladder you climb. Strange people, these squash players.

EFFECTS

Let's face it, there isn't very much you can do visually with a game

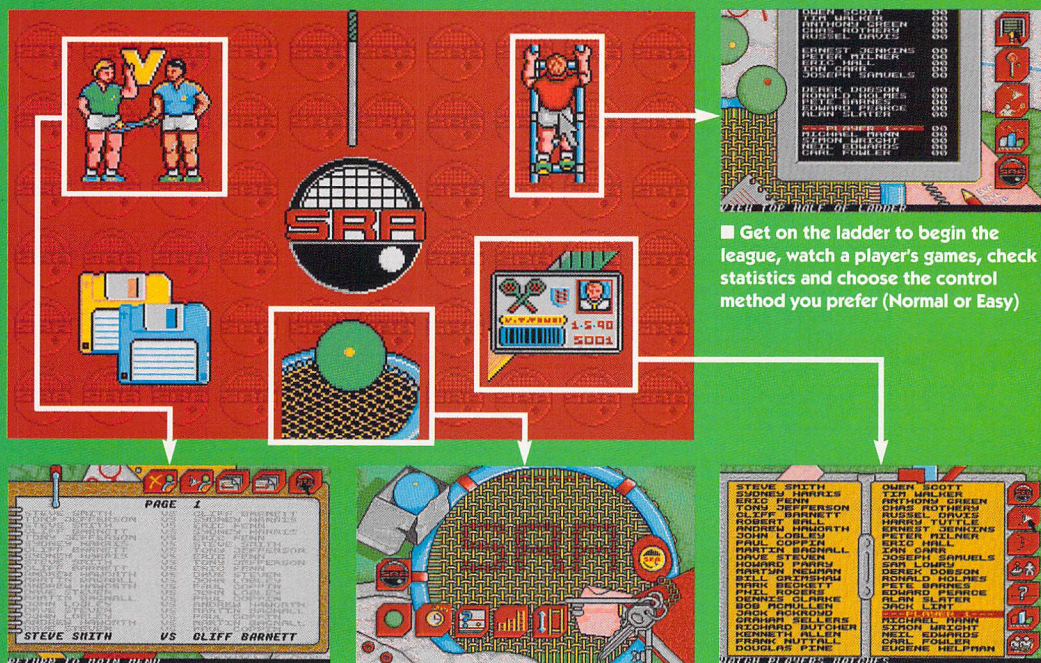
■ *Jahangir Khan's World Championship Squash* – a game where you hit a small rubber ball against a wall. Then your opponent hits the same small rubber ball back again. And so on. Can you wait?



■ If you have trouble hitting the ball correctly, try the Easy control method which takes the stroke for you. If you have trouble reaching the ball in the first place you might as well give up

THERE'S MORE TO THIS GAME THAN JUST BALLS

You thought squash was simple, didn't you? Just two overweight businessmen giving themselves a heart attack in a small plastic cage. Well, you're wrong. With these options in *JK's Squash* you can choose to have a coronary too.



■ Get on the ladder to begin the league, watch a player's games, check statistics and choose the control method you prefer (Normal or Easy)

■ The Schedule screen shows you the player you're trying not to trip over during the course of the game. It also enables you to watch a single match

■ The Options screen enables you to set ball bounciness, number of games in a set and whether you want an old or new service (that's heavy squash jargon)

■ From the Membership screen you can elect to watch a certain player's matches, see some statistics, or alter your player's name for the Tournament

like squash – it doesn't exactly lend itself to graphic splendour. With this in mind, *Krisalis* have done a reasonable job. The main game screen looks pretty much like a squash court and the options and intro screens are competently drawn. The players aren't wonderfully animated – they're a bit jerky and static – but the squash ball moves

smoothly and bounces in a realistic fashion. Sound isn't too bad either – there are some sampled claps and bounces which create a suitably squashlike atmosphere.

VERDICT

Krisalis couldn't really have done a better simulation of squash without sacrificing authenticity for gameplay. *Attack of the Amoeboid Squash*

Balls from Mars might sound more interesting, but fans of the real thing would turn their noses up at it. So within the limits of the framework, they've done a good job.

The game features everything you might want from any sports

sim, so even if you're not a squash nut you might find it absorbing enough to while away the odd week-end. Overall, then, *Jahangir Khan's World Championship Squash* is (a) a good simulation, (b) quite fun to play and (c) still a very silly game.

ED RICKETTS

GRAPHICS	7
SOUNDTRACK	6
INTELLIGENCE	5
INSTANT APPEAL	9
LONG TERM INTEREST	7
OVERALL	73%

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Stormball

After a long wait, the subject of our A Game is here – fresh-faced, eager and ready for review. Does it live up to expectation? Does it fulfill the original spec? Does it make the tea? Read on...

Stormball is set in an unspecified time in the future and simulates a fictitious sport that somewhat resembles hockey. It's played on a pitch with two halves, one half per player, and each game is divided into four quarters. At the beginning of each quarter, the ball drops into the centre of the pitch and is propelled towards one of the players. He must then catch it with his baton.

This player now has a limited amount of time – called the Timeout period – to return the ball into the other player's half. You do this by varying the power of your shot. This is indicated by the rising bar graph in the scoreline area. Press the Fire button and the bar rises. Release the Fire button when the bar shows the strength of shot you want



■ Stormball offers plenty of fun, excitement, cash, lies, betting, cheating, spherical objects and tiles... except, er, there's no cheating – or lies, actually, so, um, it's mainly a futuristic 3D sports sim, really

and the ball is instantly released into the playing arena.

The aim of the game is to make the ball pass over as many scoring tiles on the pitch as you possibly can before the other player can catch it. These may be high score tiles, which give you from ten to 300 points, x2 Multipliers, or Bonus tiles. These enable you to blast your opponent or paralyse him temporarily. There are other less helpful ones – barrier squares, for instance, deflect the ball and null squares zero your score for that throw.

You can also change virtually all the game's parameters – the Timeout period, the length of the quarters and so on. You can practise against a droid, vary its skill to suit your own

abilities – even design your own pitches. If you get really cocky and beat all the computer's opponents there's always the opportunity to link up your ST with friends via the serial port.

EFFECTS

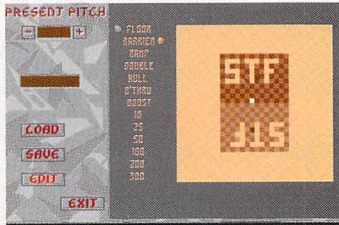
The Stormball arena is viewed from a position just behind your player, and the 3D effect works well. When you turn left and right, the pitch moves smoothly and fairly rapidly. Perspective is fine, and often the ball shrinks to a tiny dot with only the bonus scores rising in the distance to remind you of where it is. Fortunately, there's also a huge arrow that follows it around all the

time. The players are slightly wooden though – everything floats above the pitch so they just glide about. A cop-out graphically, perhaps, but it's justified by the futuristic setting. The sound is nothing special either – no samples and only a few sound-chip tunes and effects.

VERDICT

It's doubtful whether Stormball has enough variety to keep you really

interested after the first few games. The betting options and the ability to improve the rank of your character may help, as may the pitch editor, but in the end there just doesn't seem to be enough here to generate that important just-one-more-go feeling. You can't deny that the overall presentation, program-

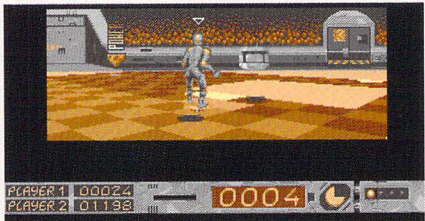


■ If you don't like the in-built pitches, design your own. You can't put all the high score tiles in one half though – whatever you do affects both halves

ming and design are top-notch – it's just that the gameplay seems to be lacking. A game is born, but it's unlikely to grow up.

ED RICKETTS

GRAPHICS	8
SOUNDTRACK	6
INTELLIGENCE	7
INSTANT APPEAL	7
LONG TERM INTEREST	6
OVERALL	71%



■ The practice droid is as good as you want it to be. Note the Power tile that's highlighted in the background – whip the ball over that and you can start to seriously kick his metal particulars



A STORM(BALL) IN A TEACUP

Once you're good enough to laugh in face of the practice droid, you can then think about challenging a human opponent. They range in ability from the frankly pathetic to the type who can win by 200 points with one leg tied behind his back. Choose your opponent carefully and prepare to do battle in the arena



■ This screen shows you what you're up against. The contestants aren't arranged in any order of competence – you simply have to click on them to find out what level they're rated at



■ This ugly hombre has a familiar-sounding name – Carruthers. Can't quite place it. Anyway, he's pretty hopeless at everything, so he's a safe bet for your first Stormball challenge



■ After you choose your opponent you can bet on winning against him with Dexter Sinister, the local wide-boy. The amount you win depends on how good your opponent turns out



■ When you reach the arena he's just as bad as you thought – in fact he's completely useless. Bonus points ahoy as you swiftly punt the ball across the special tiles and rack up your score

SARAKON



POWER 91

SIMPLY ADDICTIVE

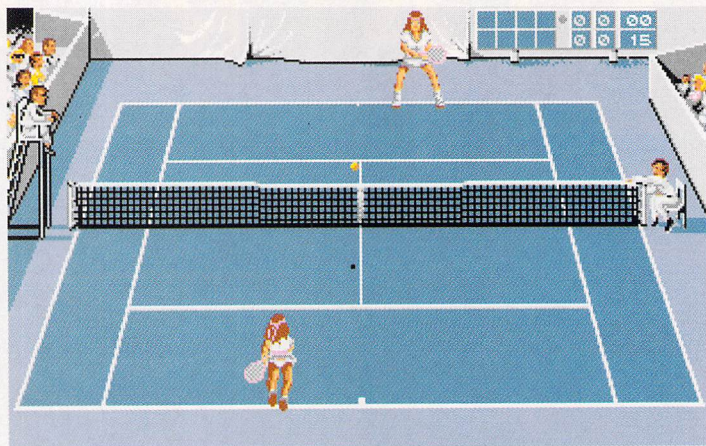


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Pro Tennis Tour 2

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■ Although the joystick controls in this 3D tennis sim are simple, it is going to take you a fair while to master the tactics enough to win a major tournament

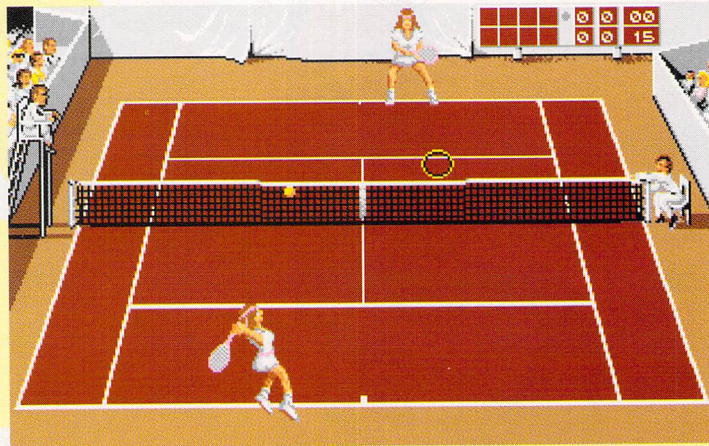
Ever fancied grunting and sweating your way to the top of the tennis circuit? Well, now you can with *Pro Tennis Tour 2*. Sport sims have always been popular

– tennis especially – and *Pro Tennis Tour 2* is a very well-produced version featuring a 3D court and 3D player sprites. You can coach your player through friendlies or practise with the ball

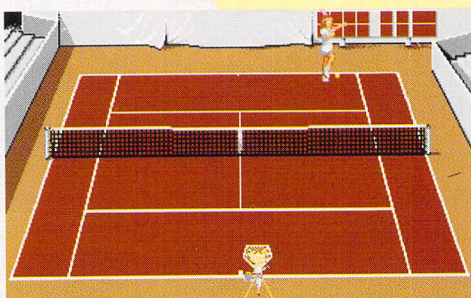
machine before taking on the ultimate challenge, the grand slam.

After a pleasant piece of digitised music you're presented with some less than pleasing chip music and the main menu. From here you can access a wealth of options. You or your ST can control up to four players, each with individual characteristics – but you need a special adapter (there are several on the market) if more than two of you want to play.

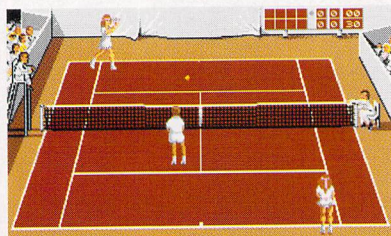
You can choose the sex of your players – boys with blue rackets and girls with pink – but if you want to play mixed doubles you need to have at least 1MByte of memory. You can adjust the strengths of various strokes



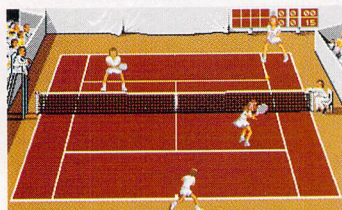
■ You have a couple of seconds to aim a target circle before firing off your service. The target shows roughly where the ball is going to land when you finally release it



■ The programmable ball machine can sharpen up your stroke – or run you swiftly into the ground



■ "You cannot be serious!" This is the three-player mode for the masochistic tennis buff



■ Mixed doubles, anyone? Up to four can play – if you have 1 meg of memory

and there are options to save and load players later on.

After a few games you really begin to identify with your player's struggle to reach the top.

The joystick control of your player is straightforward, but can take a while to master. First you must move your player into the position you want to take a shot from. When you press the Fire button, the player stops moving and prepares to play the ball. The longer you hold the button down, the harder the shot. At the same time

you can move the joystick to determine the direction of the stroke. Release the button and you make your shot. This control method makes it possible to chip, lob and smash as well as place the shot – ideally as far away from your opponent as possible.

To ease you into the game a junior option enables you to concentrate

perately trying to return the little yellow ball. The trick is to place your player for the return while keeping your eye on the ball. As in real tennis, players change ends and service, although they don't get any barley water in between.

EFFECTS

The fixed perspective view of the court doesn't lend itself to flashy graphics routines, but a lot of effort has gone into the presentation. The 3D effect is excellent – the graphics are slick and the sprites generally move around smoothly.

Great use is made of sampled effects – each game opens with a ripple of applause, the umpire calls "Fault!" a lot and if you have 1MByte you even get the score read out. The menu screens could be better and the chip music soon has you reaching for the volume control. Overall, though, the effects complement the gameplay very well.

VERDICT

Pro Tennis Tour 2 is a highly polished simulation. The initial difficulties controlling your player soon give way to addiction as you battle for every point. Even if sport sims aren't your bag, this is worth checking out. When you've mastered the ST-controlled opponents you can try and thrash your friends. It's a game that grows with your skill and should have you coming back for more when you've tired of your shoot-'em-ups.

CHRIS LLOYD

GRAPHICS	8
SOUNDTRACK	6
INTELLIGENCE	4
INSTANT APPEAL	6
LONG TERM INTEREST	8
OVERALL	73%

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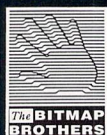
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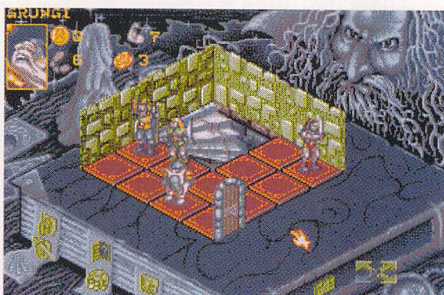


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Hero Quest

Time once again to daub your face with dirt and wander around dank dungeons in search of treasure. *Hero Quest* is an ST recreation of The Best Selling New Game of 1989, a board game that doesn't leave you bored. But does it survive the translation from board to screen?

You select new characters before you start. Up to four players can play, though you can control all four characters if you want. The game is played in turns, and in each turn a player can do two things: move and perform an action. This



■ **Bulge yer biceps – you're going to need them in this adventure game. Hero Quest casts you either as one of those supermacho heroic Conan-style male bimbos, or as a weedy bespectacled wizard with dismal dandruff. Stereotypes? What stereotypes?**

some really atmospheric and well-drawn graphics, not too cartoon-like yet not too serious. Sadly, you're let down by the sound – an annoying chip tune and no samples during the game.

VERDICT

One major disappointment is the animation. When you end up searching a room, for instance, a message tells you that some loose tiles have fallen on your head. Instead of seeing an

animated sequence, nothing at all happens. A good opportunity to improve on the board game has been missed. The same is true for the combat sequences. No matter what opponent you're fighting, the same move is always shown – a basic whack in the face.

There seems little point in playing the ST version unless you want relief from tedious dice-rolling. The other major criticism is that you can

only save your characters between quests.

Hero Quest could be worse. It's quite absorbing – more so than you'd think if you were watching someone else playing it. The 14 quests aren't too difficult – at least, not at first – and because you can attempt them in any order there's plenty to keep you interested, especially with the promise of further data and scenario disks to come. Give it a go – you might find you like it despite yourself.

ED RICKETTS

OH DEAR – ALL THIS VIOLENCE

It's not long before you start doing what you came here for – fighting. Find a slimy twisted goblin or troll (no offence to either – some of my best friends, etc), tap him on the shoulder and ask him if he spilled your pint.



■ **Aha! Here's one. Oh – there's two of them. Best make your apologies and leave the room – but it's too late, he's already heading for the combat screen. You've got no choice now but to fight him to the death. Ho hum...**



■ **This is the combat screen – just you, your opponent and two concrete flagstones. He's only a pathetic little everyday goblin. He shouldn't pose a problem. And indeed, one tiny blow and he's gone in a puff of sulphur**

can involve fighting, searching (for treasure or hidden doors) or casting a spell. However, you can't do more than this in one game turn. The number of places you can move is determined by a spinning coin (which replaces the dice of the board version). This coin spins until you stop it – the number indicates how many squares you may then move.



■ **Between quests you get the chance to buy equipment from El Dwarf's Used Battle and Scuba Diving Equipment Emporium, using any gold you managed to pick up during your previous quest**

Combat is controlled by the ST and your success depends on your character.

Each player rolls the combat die a number

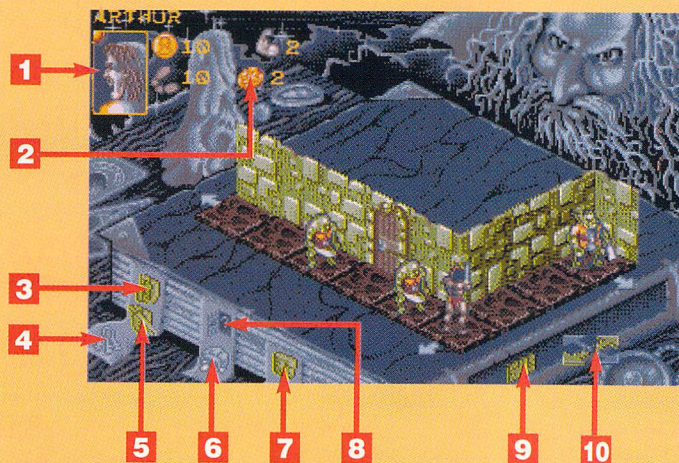
of times – one for the Wizard, three for the Barbarian – and this determines the attacking and defending strengths of the combatants. To cast a spell you must select which spell to cast and where to cast it. You can also find various helpful potions and objects simply by searching rooms.

EFFECTS

Considering the limitations adapting a board game imposes on the graphics, the display isn't half bad. The rooms and passages do tend to repeat themselves somewhat, but this doesn't detract from the atmosphere. Character graphics are instantly recognisable and quite detailed – although the jerky animation spoils the effect. Creatures look nasty enough to fit the bill, though they too don't vary all that much. The intro sequence sports

ICONS ARE FOR WIMPS, NOT HEROES

Yep, there are hundreds of these incomprehensible little icons for you to click on if you want to get your character to do anything. You spend the first hour staring blankly at the small open door with a question mark and wondering what the hell it does. So much for user-friendly icon controls...



- 1 The character whose turn it is – currently Arthur the Barbarian
- 2 Character attributes: Movement Points (distance you can move), Body Points (amount of damage you can sustain), Mind Points and Money
- 3 Go to next character – end this character's turn and try another
- 4 Unlock – guess!
- 5 Combat – you must be stood next to a monster to use this
- 6 Search room for treasure – you can only search each room once, and you may not always find anything pleasant – or indeed anything at all
- 7 Show inventory – also enables you to manipulate objects in it
- 8 Search for hidden doors or traps
- 9 Map – shows only the rooms you've visited, obviously
- 10 Move arrows – these move you around one square at a time



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MegaTraveller 1

The Zhodani Conspiracy

Role-players have hankered after *MegaTraveller* for ages. Until now it's been confined to antiquated boards and polyhedral dice. Now it's at last made it onto the ST, in a form requiring less paper and mental arithmetic, but just as much thought.

MegaTraveller begins with an excellent first section in which you choose characters for your forthcoming quest. You can select a party of four with predetermined abilities, or the program can create new characters using the traditional dice-rolling methods.

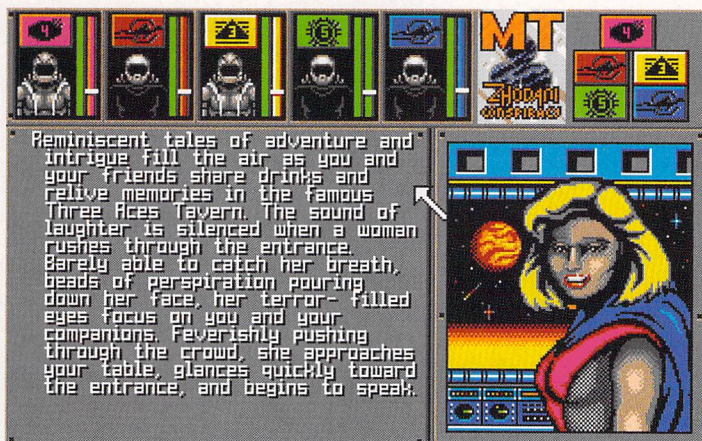
You choose a healthy, strong-looking set of statistics (for strength, dexterity and so on) and then attempt to develop them further. By clicking on various menus you send your character into the forces (Navy, Marines, Scouts, Merchants or Army) where he or she receives training. Years pass and your characters earn skill points which you can use to



■ This kind of top view is used to show your party roaming around on planets. They're not exactly advanced 16-bit graphics, but they do at least do the job of showing you where everything is

develop actual skills – piloting, communications, use of a weaponry and so on. When all your team are as strong as you can get them, it's time to move on to the main game.

Immediately after you learn what you're supposed to do, the game



■ As soon as you begin *MegaTraveller 1 – The Zhodani Conspiracy*, you get to meet this charming young lady. She fills you in with all the information you need to get started with, but watch out for the bloke who's chasing her. He's huge, he's got a massive weapon, and he's brought his mates along for a spectacular showdown

kicks into its overhead graphic view mode where you find yourself under attack. If you're quick with the mouse, you might get away safely. Moving around the screen is simple – just point the cursor where you want to go and click on the mouse. This isn't simply a *Gauntlet* game, though. It's made up of many separate parts which all require different strategies.

You spend a lot of time on planet surfaces, in space, in buildings and in ground vehicles and all these are represented by different graphics and layouts. You must also ensure that all your more able characters are employed doing the jobs that are most appropriate for them. In space, for example, computer-operators, pilots and gunners all affect the performance of their respective equipment, so you must position them carefully if you want to make the most out of the hardware. With a

sensible amount of forethought, you can fly around, load programs to navigate, jump into hyperspace, and



■ You navigate between the stars using this screen – directional controls are on the right. Once you're out of orbit, the tiny screen changes into a larger scale map full of tiny coloured dots

operate the laser for a bit of deep-space pirating.

In the early part of the game you are trying to obtain enough cash for a more powerful jump drive so that you can fly to a further star-system. You can raise cash in several ways:

kill for profit, gamble on slot-machines, go bounty-hunting, race spaceships, pirate – or simply collect and sell artefacts.

EFFECTS

MegaTraveller is not as satisfying as it could be. The graphics are a pale reflection of old 8-bit games and the sound-chip effects are dire. Many of the skills offered when you're character-creating are not yet implemented in this episode. It's good to know there are plans for expansion, but it's possible to waste your skill points on abilities which are effectively useless.

Even navigating is tough. A tiny screen shows the position of your craft in space, with pixel-sized dots of colour to show planets, moons and ships. TV owners are going to go mad trying to work it out!

VERDICT

MegaTraveller is fairly true to its older role-playing form. There's plenty to see and do. It is nowhere near as slow and complex to play out as the board versions either. *MegaTraveller* aficionados won't be disappointed.

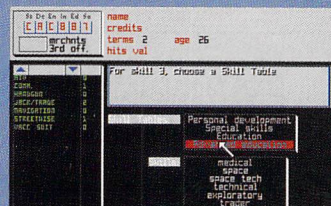
Because of laughable graphics and poor layout, however, it's going to take you days to get into. Even if you overlook the shortfall in graphics you eventually find the gameplay becomes staid and formulaic. If you need something to fire your imagination, you won't find it here.

NEIL JACKSON

GRAPHICS	2
SOUNDTRACK	2
INTELLIGENCE	8
INSTANT APPEAL	5
LONG TERM INTEREST	8
OVERALL	67%

THE RIGHT MAN IN THE RIGHT PLACE

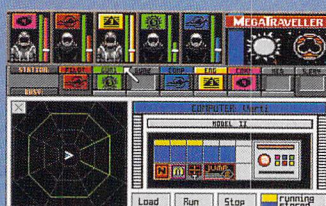
You can't get very far in *MegaTraveller 1* without a group of hardy characters to crew your ship. Select the appropriate skills for each, place them at the technical posts on your spacecraft they're best suited for – then start exploring the cosmos



■ You create characters by selecting from the appropriate menus – they offer all the broad areas of skill you need. The program picks a random skill from the various sublists below and then credits it to your character



■ The inventory screens contain all the info about your characters. You can swap weapons around, hunt through your backpack and keep an eye on your health from here. You can also analyse items and reload your guns



■ On board your ship, you select the stations you want your characters to operate. The computer screen on the right shows the navigation, targetting and jump-drive programs. The pilot's view only shows things at close range



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"Golly, Gerald, what's that game? I didn't see it in ST FORMAT." "Oh yes, Alan, it was in Screenplay extra – that bit for all the games they can't fit elsewhere." "Well I never." "What, never?" "No." "Oh."

PROJECTYLE

Electronic Arts – £10.99



Another re-release in EA's Star Performer budget range, *Projectyle* is a futuristic sports sim that's actually very good. Three players can take part but there's no concept of teamwork – just score as many goals as possible. Five separate pitches are joined together in the form of a cross, three with a narrow colour-coded goalmouth. To score a goal against a particular player you must hurl the projectyle into the goalmouth with his colour.

The fourth pitch has goalmouths for all three teams, so not surprisingly it's known as the Frantic Zone.

Various tokens appear during a game to improve your performance, and you get the chance to train your team too.

■ "Aw, please can I play?" "No, you can't – it's my *Projectyle* and I'm the captain, so go away." Cue floods of tears

Projectyle has some eye-scorching graphics – the pitch whizzes about smoothly and at phenomenal speed. The player graphics are nicely drawn as well. There are some superb sampled themes, though sound during play is fairly limited. *Projectyle* is another excellent budget buy. It's fun, fast and fantastic.

STF Rating – 91%

DISC

Infogrames – £24.99

Remember that bit in *Tron* when they started throwing those Frisbee-style affairs about? That's what you have to do in *Disc*. Two players can play, standing on either side of a chasm. Behind each player is a wall made up of eight tiles, each with a symbol on it.

One player throws the disc at the other, who

must either catch it or dodge it. Catch it and you can throw it back. Dodge it and it hits one of the tiles behind you. The symbol on the tile determines how many times it can be hit before the corresponding floor tile in front of it disappears – in the case of a circle, this is only once.

Thus, you have three ways to beat your opponent: hit him with the disc until his shield expires, trap him on one square by eliminating the others or try to make him fall off into the chasm. Everything happens so fast, you need plenty of practice – but once you get into it, *Disc* is very enjoyable. Graphics are well animated, particularly the characters, and there are some effective sampled screams when someone dies. The sampled music in the intro sequence is the best I've ever heard in any ST game. A sure bet for many hours of glued-to-the-screen gameplay.

STF Rating – 89%

FLOOD

Electronic Arts – £10.99

Flood was one of the most popular games last year and now you can pick it up for just a tenner. It features Quiffy (currently appearing in the Bullfrogs' assembly tutorial on page 95). He must wander over platform levels collecting the trash and avoiding things that bounce, slither and wobble about – Psycho Teddies, for instance. As if that isn't enough, there are also several running taps scattered around. You can dive underwater for a short time before having to come up for air, but the longer you take, the harder it gets to collect all the items. Luckily there is a sizeable arsenal of objects lying around to help you – grenades and time bombs, for example. You can even grab a spacehopper and bounce over dangerous areas.

Flood is an immensely enjoyable platform game. The graphics are detailed and humorous, and there are some excellent watery samples and sound effects. It's very easy to get into as well. At this price you really can't go wrong.

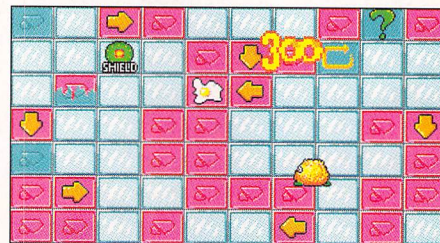
STF Rating – 87%

SUPER SKWEEK

Infogrames – £24.99

That strange creature is back in the follow-up to the surprisingly named *Skweek*. You're a round fluffy yellow creature who wanders round a playing area made of tiles. Each level has a specific goal – to rescue the Skweekettes, for example. You can fire at the ubiquitous monsters and collect bonuses which enable you to increase your

■ "All right, mate, here's your plate, get ready for the main course." "Blimey, the service in this restaurant is terrible. I'm off down the *Disc-o*"



■ Look, it's quite simple. I'll go through it just one more time. You follow the arrows up, then left, then right, down, left and right again until you reach the fried egg, then it's third right to find *Super Skweek*

firepower. Other bonuses give you extra lives, energy and so on. If you manage to complete all the levels (and there are 225 in all) you can make your own with the construction kit.

Skweek is weird but fun. Some excellent graphics complement the beefy sound effects as you're frantically trying to cope. Typically French – garish, noisy and making no sense whatsoever – it's a mindless challenge which should keep you occupied for a long time.

STF Rating – 81%



■ *Flood* – a smile, a drip, and a thousand disturbed teddies. It's more fun than wading through a paddy field wearing nothing but a loin cloth, probably

ENCOUNTER

Novagen – £20.42

A long time ago, Paul Woakes (of *Damocles* fame) wrote a game called *Encounter* for the old Atari 8-bit computers. Now there's his official ST version. You pilot a vehicle zooming across a landscape. You must shoot various spacecraft that come haring in at you and avoid the large cylinders that reflect your shots. At the end of each wave, you go into space and must avoid meteorites. Then it's back to the ground again.

To be frank, *Encounter* is boring. There's just not enough to do. Sure, the graphics are smooth and the sound's not bad, but simply roving over the ground endlessly shooting things isn't any fun. The game may have been lauded back in 1984 but nowadays we want something more. Wait for *Damocles 2* instead.

STF Rating – 58%

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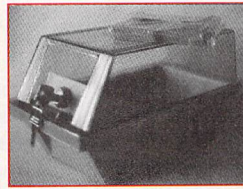
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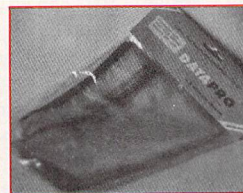


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■ "There I was, officer, sat in my front room, when in walks this giant spider and these two large-breasted birds! You're not safe in your own home." A touching domestic scene from *Lords of Chaos*

LORDS OF CHAOS

The Software Business – £24.99

Another interpretation of an 8-bit game, *Lords of Chaos* is a fantasy strategy affair. One to four players can take part, each taking the role of a wizard. You play the game in turns and have a certain number of action points for each turn. You use these to interact with the game – most commonly for moving about the land. Alternatively you can choose a spell from the 45 available. The commonest form is the Summon Creature spell, which enables you to invoke anything from a giant spider to a golden dragon. You can then move these creatures in the same way as your wizard. You can also concoct various potions if you have the right ingredients – a Speed potion, for instance, requires sulphur.

When you move about the land, everything is shown from above in a simplified plan view. On your travels, you can pick up food or take useful items like swords, for use in combat. The graphics are large, colourful and unambiguous, and there's some competent animation. Sound is reasonable: a thud or fizz accompanies most spells and adds to the atmosphere.

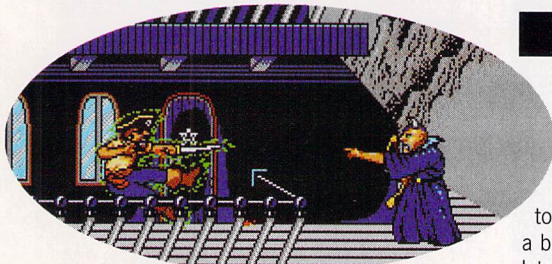
Lords of Chaos is for the more studious game-player. It takes some time to work out what to do, and there's not much frantic action, but that doesn't make it a bad game – strategy fans and RPGers are going to enjoy it. This is a refreshing change from shoot-'em-ups and war-games with ten-inch thick manuals.

STF Rating – 82%

SKULL AND CROSSBONES

Domark – £24.99

Domark's latest Tengen conversion puts you in the role of a bloodthirsty pirate doing what pirates do best. Put simply, it's a slice-'em-up,



■ "Oi! Get off my yacht, you oik! This is a private party!" Mr "I'm with the *Skull and Crossbones* crowd" fails to get in. Obviously he hasn't got a tie

and as soon as the game begins on your ship you must slice and dice your way through the opposition with your trusty sword. When a bad-die dies, he leaves behind a coin which you must collect to increase your score. Along the way you scale ropes, climb ladders, walk the plank and generally have a swashbuckling time.

Sounds good? Unfortunately, it's a duffer of a game. The graphics are childish – simple line drawings with no character – and the animation is slow and jerky. The fights are limited because you only have extremely basic moves with which to attack and defend. There's just nothing here to make you want to play on. Don't waste your money on this. If you really want to play pirates, get one of those plastic eyepatches you find in Christmas crackers – they're better value.

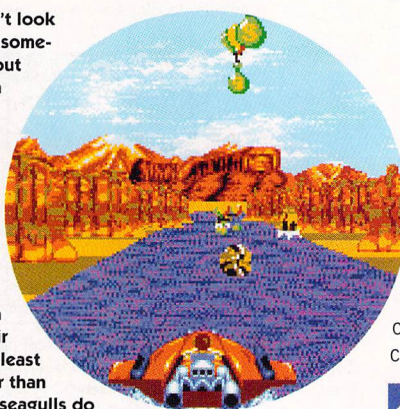
STF Rating – 59%

HYDRA

Domark – £24.99

It's not Domark's month. Licensing two Tengen conversions may have seemed a good idea, but the results aren't exactly top notch. In *Hydra*, you are in charge of a water-bound delivery service. Using your supercharged Hydracraft, you must deliver several valuable packages and

■ Er, don't look now, but some-one's about to drop a lot of dosh on your super whizzo Hydra craft vehicle transportation type affair thing. At least it's better than what the seagulls do



negotiate your way along crowded waterways. The enemy throw everything at you – buoys, helicopters, balloons and such like. Fortunately, you've got a super-duper, laser you can use against them. Now and again the head honcho steals the package from you and the only way to get it back is to blow him up and recover the package from the water.

Massive fun! Endless hours of addictive gameplay! Just two of the things *Hydra* doesn't offer. But if you're looking for a plod through a jerky seascape with the occasional shot at a yellow blob accompanied by horrible bleeps and burps, then *Hydra* may just be for you.

STF Rating – 55%

TETRIS

Infogrames – £19.99

Tetris has been re-released because of massive international demand – so we're told. You're presented with a screen containing a background picture and in the middle, a well. Into this well fall different shapes. You must form as many horizontal rows as possible by manipulating the shapes so that they fall into the correct positions. When a row is formed, it



■ Wondering why this mound of coloured blocks is stood in a field next to the Ural Mountains? That's because it's *Tetris*, the game you can eat between meals without ruining your appetite – and it comes from Russia. Some commie plot, I don't doubt...

disappears and the other pieces drop down a row. As the pieces accumulate and the game progresses, you have less time in which to jiggle the pieces, so the game gets harder.

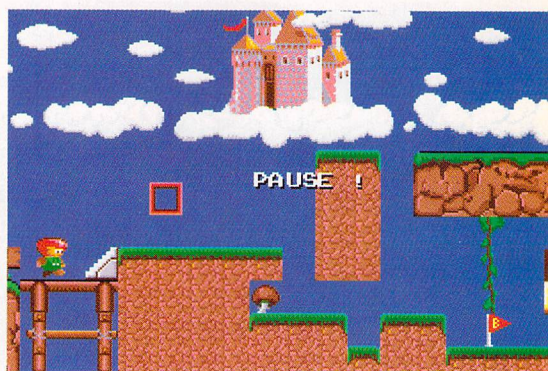
And that's basically it. There are a few options, such as variable difficulty levels, but at the risk of disagreeing with the entire world, it's not that good. Once you get competent enough to outwit the first few levels there's really not much point in continuing. *Tetris* may have been better re-released on budget, but for now it's only recommended for the serious puzzle freak.

STF Rating – 69%

BUILDERLAND

Infogrames – £19.99

What happens if you cross *Rainbow Islands*, *Brat* and *Lemmings*? It may look something like *Builderland* – a cutesy platform-style game featuring a nameless hero marching on, regardless of your actions. Your job is to provide a safe route for him to take. If there's a hole in his path, for instance, you need to fill it with a block or he falls into it. He can't climb up either, so you need to place staircases in his way as well – and so on. The



■ No, mate, you've had cowboys in 'ere. Look at the state of that castle! Good thing you're in *Builderland*. I can do it for 400 – 700 tops. Tell you what I'll do, just for you. Call it 500, for cash...

graphics are of the Bright Childish Simplistic School a la *Rainbow Islands* and the sound could take the award for Most Horrible Tune Ever, but the game isn't that bad. It's somewhat frustrating, though, because you must work ahead to a great extent and if you don't see a hazard coming there's very little time to prevent a disaster. *Builderland* is certainly nothing to get overly excited about, but it's fun for a while and may appeal to younger users.

STF Rating – 71%

THE WINNING TEAM

Domark – £29.99

This latest compilation contains five “classic” games. In *Klax* you have to catch coloured tiles in your flipper and wang them into one of five bins in the hope of making a Klax – an alignment of three similar-coloured tiles. You can only hold five tiles at once so you have to work quickly, but the graphics are decidedly 8-bit and the game doesn’t hold your attention for long. In *APB*, you’re a cruising policeman who must capture a certain number of offenders each game day. This isn’t very good either – the graphics are small and badly-drawn and the game itself is dull. *Cyberball* is futuristic American Football for droids. It’s got all the



■ *Escape from the Planet of the Robot Monsters* is a 3D shoot-'em-up, but the best thing about it is its long title – *Escape from... what was it again?*

usual offensive and defensive plays, laterals, blitzes etc etc. Gameplay too is reminiscent of *Gridiron* – frantic five-second bursts of action and hours of waiting. If you know what a Can-o-

Corn Offensive Running Play is, *Cyberball* is for you. *Vindicators* makes you the commander of a tank blowing up other tanks and collecting stars. The graphics are 3D (ish), but again it’s something you might play for ten minutes before turning off. The only redeeming feature is *Escape from the Planet of the Robot Monsters*. You’re a hero who must rescue humans enslaved by the Robot Monsters. The cartoon-style animation is excellent, and gameplay is fast and furious with plenty of blasting. Overall, not much of a Winning Team – more a Winning Team member. You might buy it just for *Escape*, but £29.99 isn’t exactly a budget price.

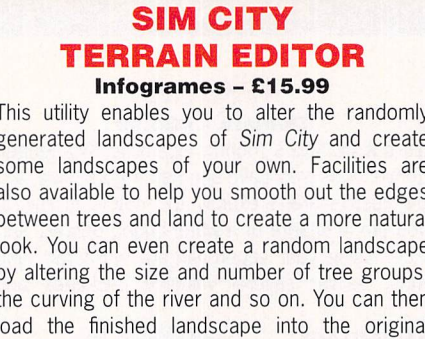
STF Rating – 56%

COHORT

Impressions – £24.99

Impressions are churning out strategy games and their latest is this follow-up to *Rorke’s Drift*. *Cohort* doesn’t pretend to be an impressive world-scale simulation of global warfare – it’s the sort of thing you might do with toy soldiers on your desk. Although there are five scenarios – on a bridge, by a clifftop and so on – each one has the same goal: beat the living daylighters out of the opposition. You can move individual units or whole divisions by clicking on them with the mouse and then clicking on the location you want them to go to. If they encounter any enemies, they start fighting until one side wins.

Sounds simple, and indeed it is. There are many options to mess about with – altering the composition of your army, for instance, or trying new formations. Everything a strategy fan could want is included even though the graphics are simple and the sound is strictly minimal. *Cohort* is bound to appeal to the hardcore wargamer because it’s completely strategy-based. There are no pretty arcade bits like you see in *Betrayal*, but buy it if wargames are your bag.



■ *Radial City, 1921*. Times are hard. Real hard. Folks don’t even have enough money to build a house, a road, a multi-storey carpark – anything really. Thank God for the *Sim City Terrain Editor*!

game and build over it at will. Nothing spectacular, and certainly not worth the asking price unless you really want every *Sim* program ever.

STF Rating – 51%

OTHELLO KILLER

UBI Soft – £19.99

Othello, the game with rules that nobody understands, is now available on your ST. Each player takes turns to place a double-sided piece, black on one side and white on the other, on a board in such a way as to form a line horizontally, vertically or diagonally with another of his pieces. If there are pieces of the opposite colour in-between, then you can turn these pieces over so that they become your colour. You then win those pieces. When the board is full or no player can continue, the winner is the person with the most pieces on the board.

Othello Killer offers you basic gameplay and a bit more – a robotic voice calling out whose move it is, for instance. Graphics and sound are simply functional, but if you’re a member of the English Obsessive Othello Club, it’s a must.



STF Rating – 65%

FORMAT RATINGS THIS MONTH		
How did they rate this issue? Here are all the games FORMAT reviewed this month		
	Lemmings	page 51 94%
	Projectyle	page 69 91%
	Disc	page 69 89%
	Flood	page 69 87%
	Wonderland	page 48 85%
	Hill Street Blues	page 54 83%
	Lords of Chaos	page 71 82%
	Super Skweek	page 69 81%
	Hero Quest	page 65 78%
	Supercars 2	page 53 74%
	Jahangir Khan’s World Championship Squash	page 57 73%
	Pro Tennis Tour	page 62 73%
	Builderland	page 71 71%
	Stormball	page 60 71%
	Cohort	page 72 69%
	Tetris	page 71 69%
	Mega Traveller 1	page 67 67%
	Othello Killer	page 72 65%
	Skull & Crossbones	page 71 59%
	Encounter	page 69 58%
	The Winning Team	page 72 56%
	Hydra	page 71 53%
	Sim City Terrain Editor	page 72 51%

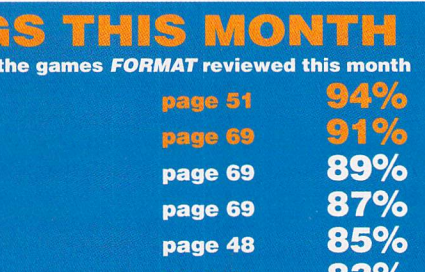
BARGAIN BUDGET BASEMENT BUMP

Most major labels these days have a subsidiary company devoted to budget software, and often you can pick up many fine oldies on re-release for less than a tenner. Action Sixteen, for instance, have made *North and South*, *Sherman M4* and *Kult* available again for a very attractive £8.16.

North and South is a cartoon-style arcade/strategy game – 72%. *Sherman M4* is a sort of forerunner to *Battle Command* with 3D tanks engaged in blowing each other up (74%), whereas *Kult* is a well weird graphical adventure – 84%.

Respray is Domark’s new budget label and they kick off with *Toobin’*, an arcade game featuring a gentleman floating down a river on a rubber tube – 57%. *Hard Drivin’* is basically the same as *Hard Drivin’ 2* but without the track editor and with loads of bugs – 68%. *APB*, which is also available on The Winning Team compilation (see above) – 55%. They all cost only £7.99.

Finally, in addition to *Flood* and *Projectyle*, Electronic Arts are re-releasing *Starflight*, a heavily *Elite*-influenced space exploration/trading game – 76%.



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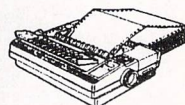
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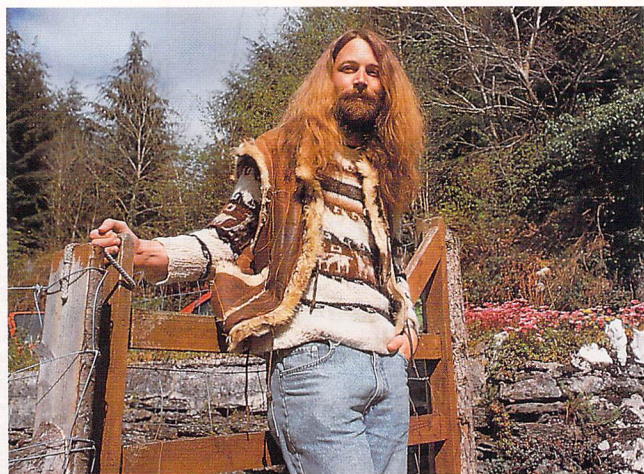


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A yak's favo



*Ace game-programmer Jeff Minter, llama fanatic and creator of the **FORMAT** Gold winning **Llamatron**, picks his fave Top 20 games of all time exclusively for **ST FORMAT***

Jeff Minter, or Yak as he prefers to be known, is a veteran of the games industry. He began writing games for the Vic-20 many years ago – he once wrote a complete version of *Gridrunner* that totalled an incredible 3K in size, and that included all the sound effects and graphic routines! He soon progressed onto bigger and more powerful micros, but his games always retained a distinctive flavour, often featuring mutant llamas,

1 LLAMATRON

Released May 1991



£5.00 **STF 24: 95%**
Llamasoft ☎ 0734 814478
(Also available from PD libraries – see page 98)
“Yes, it's one of mine, but it's not here just because I wrote it. I've always loved *Robotron* – in some ways it's really the ultimate shoot-'em-up. It inspired *Llamatron* but the latter has a lot more levels and weirder weirdoes than the arcade machine. It lets anyone take on the first few levels but can soon challenge even a hardened zapfiend”

2 STARGLIDER 2

Released September 1988



£24.99 **STAmiga 4: 95%**
Rainbird/Microprose ☎ 0666 504326
“This 3D exploration/blaster gets a new lease of life in the Yak charts because it runs on the TT – you want to see fast 3D? Then take a look at this. I love the idea of having a whole solar system as a gameworld for you to interact with. Saying that, it still suffers from the same major flaw as *Damocles*: there's a whole system full of worlds and objects for you to explore, but there aren't any people”

3 LEMMINGS

Released May 1991



£25.99 **STF 24: 94%**
Psychonosis ☎ 051 709 5755
“One of the best designed games I've seen for ages. I have always liked games which require a bit of lateral thinking. The idea of replacing the single player entity with a whole herd of wee shaggy beasties is inspired and it works excellently. If you value your sanity, keep your mouse balls clean for *Lemmings*. Accurate mouse control is paramount in this game” (See the *FORMAT* review on page 51)

6 CAPTAIN BLOOD

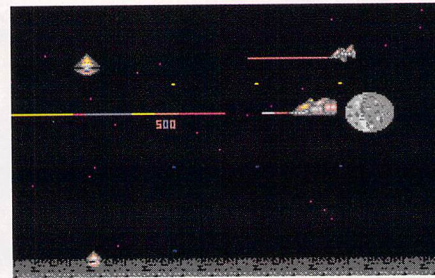
Released July 1988



£24.99 **STAmiga 2: 91%**
Infogrames ☎ 071 7388199
“I like this because it's so damn strange. The Jarre samples were a bit of a letdown but there's a lot of impressive stuff here: the fractal flight sequences and especially the unnecessarily psychedelic warp sequence. The unique style of the Exxos graphics gives the game a weird atmosphere and sets it apart from other adventures. It might perhaps be a bit too weird for some but it's worth seeing”

7 DEFENDER 2

Released December 1990



£19.99 **STF 18: 88%**
ARC ☎ 0753 33344
“This isn't because I wrote it, it's mainly because I'm nuts about Williams games – *Stargate* in particular. What did you expect? This has good versions of both the original *Defender* and *Stargate*, as well as a version of *Defender 2* – complete with loads of extra levels and weapons. This was the first game where I got to grips with samples too. *Defender 2* has to be loud. Weedy chip noise just will not do”

8 VIRUS

Released June 1988



£19.99 **STAmiga 1: 86%**
Firebird ☎ 0666 504326
“I know *Virus* lacks depth, and you need a clean mouse and at least two days of flight training before you can even fly the thing, but stick with it and it pays off. When you can zoom and swoop to perfection, deal death to all those scumbag mutants and fighters, execute powered dives to get yourself out of trouble and pull out only pixels above the ground, it's excellent”

write games

goats or sheep, and having bizarre titles like *Revenge of the Mutant Camels*.

His first game for the ST was a version of *Defender* called *Andes Attack* which substituted llamas for humanoid. *Super Gridrunner* soon followed. Since then he's had programs published both under his own Llamasoft label and by Atari's software arm, ARC – most notably *Photon Storm* and *Defender 2*, the best version of *Defender* ever produced for the ST.

A hippie and proud of it, Yak specialises in taking old game concepts like *Defender*, adding enhanced (and weird) graphics and sound, and improving the gameplay. His philosophy is that fancy graphics count for nothing if the game doesn't grab you. *Llamatron*, his latest effort, has been awarded a *FORMAT* Gold (see the review on page 98) and is available as Share-

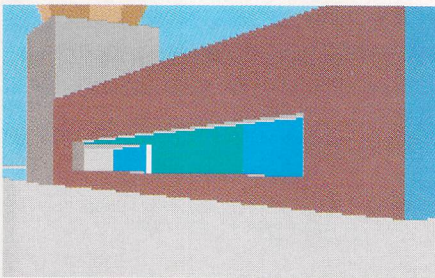
ware, and an exclusive version is yours free on this month's Cover Disk – see page 38.

But Yak doesn't just write games. Ever since the early days he's been developing "light synthesisers." Beginning with *Psychedelia* for the 8-bits, he progressed to *Colourspace* for the ST and the radically improved and updated version, *Trip-A-Tron*, which took a year to write (see our video feature on page 34 for more info).

So what's next? Well, possibly more and even better Shareware releases – if people are prepared to show their support for *Llamatron*. But at the moment Yak's time is taken up with a certain new piece of hardware from Atari. Suffice to say its name isn't a million miles away from "Jaguar" and he's "getting to grips with its video chip." We should see some results by the end of the year. *stf*

4 DAMOCLES

Released July 1990



£24.95 Novagen *STF* 13: 94%
☎ 021 449 9516

"*Damocles* (the sequel to *Mercenary*) is incredibly impressive in scope, has a vast play area, and contains weird things like a small planet called Midas with nothing but 16 million individually-numbered pyramids on it. Unfortunately, just like *Starglider 2*, this game suffers a bit because it's totally devoid of life. Every planet is a bit like a kind of galactic Newcastle Emlyn on a Wednesday afternoon"

9 GAUNTLET 2

Re-released March 1991

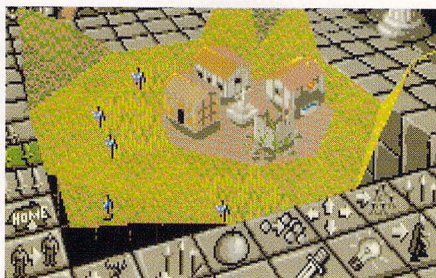


£7.99 Kixx *STF* 21: 86%
☎ 021 625 3311

"I liked this one because it's pretty close to the arcade original – it's even got all the samples. The ability to choose your character is far more flexible than *Gauntlet* too. You can have a party of up to four Wizards for example. The game is also a lot more technically accomplished. I really like multi-player co-operative games – they're so few and far between, and *Gauntlet 2* is one of the best"

5 POWERMONGER

Released December 1990



£29.99 Electronic Arts *STF* 19: 93%
☎ 0753 49442

"I'm not usually into wargames, but *Powermonger* by the Bullfrog team manages to get you instantly interested with its unique graphical representation of the gameworld. It's fun watching your armies wasting the enemy soldiers, looting, pillaging and stealing the women or raping the cattle. It's still a bit upsetting though because sometimes you have to eat the sheep in order to survive a harsh winter"

10 ROBOT MONSTERS

Released April 1990



£24.99 Domark *STF* 10: 80%
☎ 081 780 2222

(Also available in *The Winning Team* compilation – see the review on page 72)
"Escape From The Planet of The Robot Monsters is a bit like a sort of 3D *Robotron*. This has a wicked two-player co-operative mode and is very playable. The graphics are amusing too – especially when you frazzle one of your own bimbos. No great tech wizardry – just a good and unpretentious zapper"

11 SUPER GRIDRUNNER Released March 1991

£9.99 Action Sixteen *STF* 21: 88%
☎ 0276 684959

"On the TT, this oldie gets a new lease of life. It runs flawlessly, is 20% faster than on the ST and doesn't slow down at all – even if there's plenty of junk on the screen while you're playing"

12 ARKANOID Released August 1988

£N/A Imagine *STAmiga* 3: 80%
No longer available

"Technically flawless but only runs on the old TOS. Ridiculously simple as a game idea, this is just so playable and it's as addictive as flip"

13 E-MOTION Released March 1990

£19.99 US Gold *STF* 9: 76%
☎ 021 625 3388

"This is a weird game that requires two of my favourite game skills: a good deal of logical thought and the ability to fly a ship well"

14 ELITE Released October 1988

£19.99 Firebird *STAmiga* 5: 75%
☎ 0666 504326

"I really enjoy this one. You could still do with a sense of 'being there' though. It's more like 'I'll just rotate that alien into the middle of the screen' than 'oh no, he's gonna toast my ass!'"

15 STUNT CAR RACER Released October 1989

£19.99 Microstyle *STF* 4: 74%
☎ 0666 504326

"The best driving game for the ST. Some truly wicked 3D creates a very real world. It's a shame it doesn't want to run on my TT though"

16 DUNGEON MASTER Released April 1988

£19.99 Mirrorsoft *STF*: 93%
☎ 071 928 1454

"This is excellent, not least because it encourages people who are usually bored by the standard RPG stuff to have a go. Great fun, especially with a group of you"

17 PLUTOS Released October 1987

£N/A Microvalue/Tynesoft *STF*: 82%
No longer available

"A really old game. Graphics aren't anything eyeballobusting but it's a better vertical scroller than many other better known games. It's even more fun with two players"

18 TIME BANDIT Released April 1988

£N/A Microdeal *STF*: 69%
No longer available

"A multi-directional scrolling exploration cum blaster game, with the emphasis on blasting at the higher levels. There are plenty of puzzles and there's even a sheep in it too"

19 FLIGHT SIMULATOR 2 Released Sept 1987

£39.99 SubLogic *STF*: 75%
☎ 0494 728439

"Okay, so there are no lasers and you're usually just pootling about in a Cessna or Learjet, but it's fun to do silly things like fly upside-down under San Francisco's Bay Bridge"

20 THE HANDY HENDY BENDY MANDY

"An amazingly-fast program that generates Mandelbrot sets, written by my mate Hendy the Mad Mathematician. It's not finished, you can't buy it and it isn't strictly a game, but I play with it for hours"

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- ☆ **QUEST FOR THE HOLY GRAIL:** A zany madcap adventure which is loosely based upon the film "Monty Python and the Holy Grail"; a must for python fans. Whilst walking in the fog you are suddenly transported to medieval England - it is 926AD the time of King Arthur. You must find the Holy Grail noble knight!!
- ☆ **UNDERGROUND ADVENTURE:** written by Mark Welch. A futuristic adventure set in the year 2093. It is rumoured that there was once an underground complex of caves and tunnels where the elite few hid during the recent atomic cataclysm. No trace has ever been found of these hidden politicians and millionaires. Your adventure starts at the bottom of a deep pit. This is the first of 68 locations and all is in darkness. You can just about make out the position of an old flashlight and the outline of what appears to be a short metal bar. Good luck, you will need it!
- ☆ **THE PYRAMID OF MUNA:** You have been studying the Myan Pyramids and have come across information that leads you to believe that there are other, much older ruins in that area that may predate Myan civilisation. You have in your possession an artifact that was found in the Myan pyramids. It is a 6 pointed star with precious gems embedded in it. Writings in the pyramids seem to indicate that this star may be the key to unlocking the secret of the older ruins. Today is the day that you have arranged to visit the site of these older ruins. Are you ready to explore the 65 challenging levels that follow?
- ☆ **SON OF STAGEFRIGHT:** you play the part of an actor or actress who is trying to get out of an old abandoned theatre. This is an adventure in 3 'acts' where each act has a different theme and a different challenge.

ADVENTURE GAMES - VOL 2

- ☆ **FAST LANE:** In this excellent game you attempt, against much adversity, to locate, enter and win a Classic Car Show. You must overcome obstructive family members, odd creatures, criminals and the law as well as a host of other assorted trials and tribulations to accumulate the 800 points available in this 39 location adventure. A very well done game with an unusual theme.
- ☆ **GHOST TOWN:** this is a fairly large 88 location adventure written by E.L. Cheney. You are a prospector searching for gold and adventure. Another old prospector has told you a story of a fabulous mine and an even richer old ghost town nearby. Whilst the town is supposedly deserted there have been rumours of strange noises, gunfires and terrifying screams coming from the place. You have walked long and hard for days only to find yourself lost in a trackless prairie with nothing but your wits to save your life.
- ☆ **CRUSADE ADVENTURE:** you assume the role of Godfrey de Goodhead, a bold but impoverished Knight. King Frederick III has called upon you to rescue his only daughter, the beautiful Princess Ann from the dungeons of baron Von Evil's castle.
- ☆ **STAR PORTAL:** by Michael Detlefsen this is a science fiction adventure based on the story entitled 'Ticket to Anywhere' in which you journey to the stars. You must search the martian deserts and commence your quest through this 177 location adventure.
- ☆ **ODIEUS'S QUEST FOR THE MAGIC FLINGSHOT:** you are Odieus, son of Odieille of the ancient Winwood family. Coming from a line of sorcerers and enchantresses, you naturally undertake the preservation of your ancestral traditions. Your arch enemy Blackwing has taken your Magic Flingshot, used for flinging magic spells, can you get it back?

SHOOT-EM UPS GAMES - VOL 1

- ☆ **TRACKER:** Drive your tracker through hostile environments and destroy the enemy tracker base. Joystick required.
- ☆ **OVERLANDER:** another classic shoot-em-up. Can you fly overland and destroy the enemy base. Watch for ground fire and electrical generation. Joystick required.
- ☆ **CHANCE:** The Archons have taken over the nearest space platform to earth. From here they intend to build a large strike force and take over our world. Can you fly through their defence system and wipe out the mothership? But beware as the platform is unstable! Joystick required.
- ☆ **ESCAPE FROM THE TOMB OF RA:** How did you get in, how can you get out? Collect jewels to prolong life, seek out the secret passages but, above all get out alive, if you can! Joystick required.
- ☆ **MUTANT:** The reactor in the worlds first nuclear powered mine has gone out of control. The workers have received high doses of radiation make them mutate. Only one person can get to the end cavern and destroy it; will it be you? Joystick required.

SHOOT-EM UPS GAMES - VOL 2

- ☆ **CAVERNS OF NERAK:** Forced to land on the planet Nerak you must leave your ship and explore the caverns on your gravity sledge in the hope of finding Energy Pods. These are your only chance of replacing the ships depleted power supply and escaping from the planet. The Neraks have other ideas though.
- ☆ **KEY TO ATLANTIS:** Excellent scrolling shoot-em-up. Collect as much treasure as you can (keys, goblets, necklaces, chests) as these will prolong life. Beware of the bubbles and watch those clams! Joystick required.
- ☆ **HAUNTED MONASTERY:** Only you, a lone monk, can find the treasure vault, you must fight the ghostly guardians but remember, all is not what it seems!!
- ☆ **WIZARD:** It was a mistake to take a short cut home through the wizards domain. Now you must face his wrath and see if you can survive.
- ☆ **DROID:** You are lost in the Ajax factory. Guide Droid upward through the levels and destroy all the evil chemicals that are being developed.

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Gamebusters



Following massive public demand we present the sequel to last month's stunning feature, Gamebusters. You THRILLED to the tips! You GASPED at the cheat modes! You ALMOST FELL OVER IN EXCITEMENT at the other bits! Now – join Ed Ricketts as he SWAYS SLOWLY IN JOY at this month's ton of tips

ENCHANTED LANDS

Thalion

Becky Lindbourne of Bath proffers this tip for everyone struggling with this really rather good game. Try typing TCB RULES FOREVER on the intro screen. Do it correctly and the screen flashes. From now on pressing F2 and the Spacebar simultaneously takes you to the end-of-level baddie.

EXTERMINATOR

Audiogenic

Improve your pest control with this handy tip from Kok-Wai Yam of London. When you're in the kitchen of a house – remember, not every house has a kitchen – shoot at the top half of the fridge when it opens. You have to be quick because it only opens for a split second once during a round. Succeed and you're rewarded with a bonus of 275,000 points as well as being warped to the next house.



■ Yeah, mate, you've got an Infestation of roaches there... bit bigger than normal, though... actually, a lot bigger... um – have you got a mallet at all?

INFESTATION

Psygnosis

Scott Wolf of, er, America (that's the only address he gave) offers this tip for this game which has recently been included on the Monster Pack compilation. Start the game and bring up the HUD scratch pad. Type I AM NOT A CHEAT, press <Undo>, then <Help>, and finally <Escape>. When you restart you possess the elevator card, the screwdriver, the datalink/compass, quarters key and IR scanner. Additionally, pressing <Escape> displays the final screens. There is a drawback, however: games saved with the cheat mode active are subject to unpredictable malfunctions.

INTERNATIONAL ICE HOCKEY

Impulze

When your team scores a goal, press F1 to pause and wait until the music has finished. Then release the F1 button and your goals increase. A pucking good tip from Jon Hill of Dorset.

LOTUS ESPRIT TURBO CHALLENGE

Gremlin

Peter Lynch of Somerset has discovered some interesting things to do in this game (not that the game itself isn't interesting, oh no, certainly not, that's not what I meant at all, Officer). Type player one's name in as ANGEL DARK and player two's name as HARVEST HOME for some help with the race. If you get bored with racing, however, type player one's name as MONSTER and player two's as SEVENTEEN. Now you can play a vertically scrolling shoot-'em-up instead!

PRINCE OF PERSIA

Domark

Prince not cooperating? Then try this advice from Alex Carmichael of Glasgow. WARNING! It involves making changes to your saved game file. Make a back-up of this file first – we are not responsible if you screw up your disk.

Using a disk or file editor (such as MEMFILE 2.0 or DLII, both yours free on FORMAT Cover Disk 22) you can edit the first four bytes of the file to gain extra time and suchlike. Set the first two bytes to F6 10 (hex) to reset the time remaining to 60 mins. The next two bytes are the level and your energy: change byte three to 01-0C (hex) for levels 1-12, and byte four to a suitably high hex number such as 44. Then simply reload the file into the game and you're away. Be careful not to change anything else in the file, though, because the game may not then recognise it.



■ Cities, eh? Who needs 'em! Nasty, dirty, smelly things, full of putrid people and horrible roads and buses and hamsters. Still, they're fun to wreak havoc on (as my old mate Godzilla used to say...)

SIM CITY

Infogrames

At last! We've got a tip from a Mr Man! Well, all right then, Jonathan Man of Middlesex. Set the game speed to PAUSE and type FUND (in upper case letters). Save the city, set the game speed to FAST and reload your city to see what happens. (Cue maniacal but friendly laughter...)

TREASURE ISLAND DIZZY

Codemasters

Another quickie from Paul Rhys-Thompson of Lancashire. When the game starts just type EGGSONLEGS to become invincible.

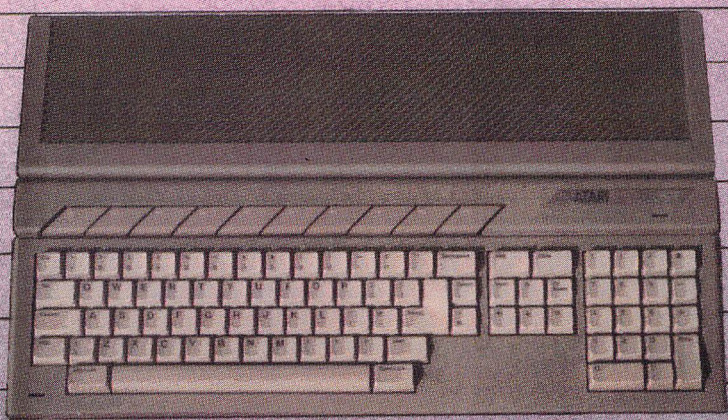
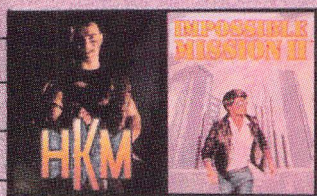


■ No really, Officer, all I wanted to do was get my sword and pile of bones in order to murder the evil Vizier. I'm a Prince of Persia, you see – and I can explain about the pyjamas, too, honest

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TURRICAN 2**Rainbow Arts**

Yo, er, man! Beat those monsters to a small lump of pulsating jelly with this guide on how to kill the baddies from **Peter Stock of Suffolk**.

● **Level 1-1:** stand in the middle of the screen and aim your Surround Beam at its head. When the bits of cavern fall down, aim your Surround Beam at them.

● **Level 1-2:** turn yourself into a Gyroscope, hold the joystick to the right and press the Spacebar twice.

● **Level 2-1:** aim your Surround Beam at its eye and jump. Duck to avoid its laser.

● **Level 2-2:** destroy its lasers, then aim your Surround Beam at its eye in the centre.

● **Level 3-1:** try not to get Bounce or Multiple weapons, just the laser. Shoot the eyeballs.

● **Level 3-2:** destroy its lasers, shoot the side sections and finally the middle section.

● **Level 3-3:** when it splits in half, shoot the middle section and then shoot the other sections, avoiding its bullets.

● **Level 4-1:** when it opens its mouth, jump its bullets and keep firing at its head.

● **Level 4-2:** when the Giant Walkers run towards you on the conveyor belt, all you need to do is jump over them.

VERMINATOR**Rainbird**

Go into the shop and buy a hammer. Then sell it for 50 credits. Go up to the till and you'll have bought the falcons for 50 credits. Sell these to make some serious money.

X-OUT**Rainbow Arts**

Go to the shop (what, another shop?), buy the shield and throw it away instantly. You get 500 points for this. Repeat indefinitely – until you either fall asleep or your hand falls off.

THE MEANING OF LIFE (PART TWO)

And now, **FORMAT** proudly presents more excerpts from the extensive portfolio of hints and cheats of **Scott Wills (he of the West Midlands)**.

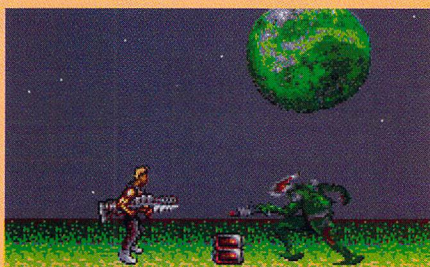
ACTION FIGHTER**Microprose**

Type ZBACKDOOR into the high score table for infinite lives and energy.

AMC**Dinamic**

Access codes you might like to try:

a: NOSTROMO	b: DISCOVERY
c: ENTERPRISE	d: DAGOBAH
e: REPLICANT	f: KRULL
g: METROPOLIS	



■ "Hello. You may not need this Titanium Plated Supercharged Astro Marine Corps Photon Blaster right now, but think of the future. With just a few easy monthly payments it could be yours forever to treasure in your own home," etc etc...

CRAZY CARS**Titus**

Get up to 240 mph, then press F10 to pause the car. The game slows down but you can still control the car. Press "Fire" and move left and right and you can easily avoid all obstructions.

DYNAMITE DUX**Activision**

Type CHEAT on the title screen. Then you can just press F1-F6 in the game to skip levels. Type NUDE to go boxing.

E-MOTION**US Gold**

On the title screen type MOONUNIT, then press these keys during the game:

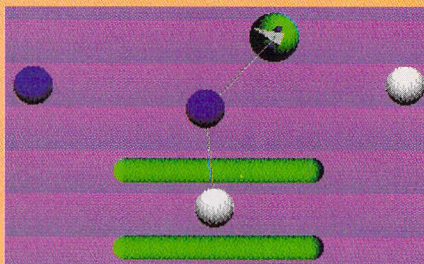
F1 – advance a level
F2 – advance 10 levels
F3 – go back a level
F4 – go back 10 levels.

Some E-Motional Tips:

Level 1: don't use your thrusters too much and don't use the game's wrap-around effect

Levels 2 and 3: don't turn right. To help yourself, use the flip

Level 4: fail this level! Sit around collecting all the orange orbs and leaving the blue ones until last.



■ There's a golden opportunity here for a cheap joke about balls and suchlike, but I wouldn't stoop to such depths in a family magazine. Cor, look at the size of them orbs! Oops – sorry...

HAMMERFIST**Activision**

On the high score table type in TAEHC OT TNAW I. Then during the game press F7 to advance a screen.



■ Do the Hammerfist shuffle – it's easy! Just take off all your clothes, pull on some kinky boots and follow the droid! A-one, a-two, a -one-two-three-four... (I don't know, Max. Think it'll catch on?)

HELTER SKELTER**Audiogenic****Passwords:**

Level 21 – FLIP

Level 41 – GOAL

Level 61 – TWIN

Level 11 – SPIN

Level 31 – BALL

Level 51 – LEFT

Level 71 – PLAY

POWERPLAY**Arcana**

A completely pointless tip. Take Disk 2 out of the drive and replace it with a blank disk during

play. The result? You're asked the same question all the time. Nanoseconds of fun!

PUFFY'S SAGA**UBI Soft**

When your health reaches zero, pause the game. Run your fingers over the keys from F1 to F7. You now have four keys, four goms and 2,000 health points. If you have two magic goms press F6 and F7 simultaneously to see a map of the present level.

SILKWORM**16 Blitz Plus/Mastertronic**

During play, type in GORGONZOLA. Press C to get more credits, up to a maximum of nine.



■ Lesson 1: Never Wear Your Shades Whilst Skateboarding Lest Your Ass Encounter The Ground In An Unexpected Falling-Over Style Situation (Pause...) Er, no, you can't have your money back. That is the lesson. Sorry. We're on the skidz...

SKIDZ**Gremlin**

Hold down "Fire" and <Alternate> together. While doing this tap C to activate the cheat mode. Alternatively, you can hold down "Fire" and <Alternate> and tap M to skip a level.

STREET FIGHTER**US Gold**

On the title screen type in STREET CHEAT. In the game press <Help> to advance a level.

TURBO OUTRUN**US Gold**

After the countdown type WEARAPEEPEL. Now use these keys:

B – begin again keeping your score

D – renew Turbo

F – see the end sequence

G – remove credit

continued on page 83 ➤

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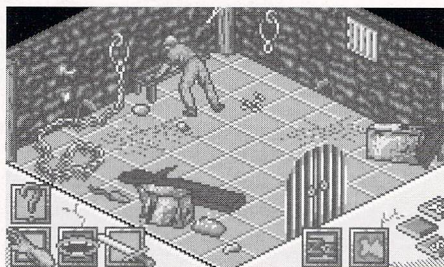
THE FINAL BATTLE

PSS

Not quite sure exactly how we came by this 50-step complete solution – all that's known is it's by Karl Buckingham and Richard Hewison. The directions are short and to the point, but useable. Remember: to "operate," double-click.

- 1 Inside the cell: Operate on the bench. Up.
- 2 On the bench: Open the grille. Up.
- 3 In the air vent: North.
- 4 Inside the air vent: open the grille. In.
- 5 Inside the cell: out. South. South. Open drawer. Take rusty key. Operate rusty key to clean it. North. North. In. Operate chain. Use polished key to free Jerub. South. South.
- 6 Corner of the passage: east. Operate door.
- 7 Inside the chamber: attack humanoid with your hands. Get his knife. Jerub should operate Crysella's rope to free her. Steroff should operate on Pagan's manacles to free him. Operate the railing with the rope and send Jerub down.
- 8 Down the well: take the tinder box, as well as the backpack and the necklace. Up. Take the rope. Out. Up.
- 9 Inside the main hall: attack the humanoids with the knife. Out.
- 10 Outside the main hall: down. West. Turn the wagon over (double-click). East. East. Attack door. In.
- 11 In the guard house: operate the rocks to reveal a trap door. Open the trap door. Down.
- 12 In a darkened tunnel: light torch. South.
- 13 Bottom of the stairs: throw an object at the spider's web. Get gold key. Get Crysella to examine the walls to find a niche full of arrows. North. Up. Out. South.
- 14 Alongside the well: drop the bucket down the well (double-click). Ensure that Crysella has the gold key. Operate the niche with the gold key to open it. Take the yellow crystal. Up.
- 15 Alongside the well: up. West. In. Up. Get the silver ring from the table. Attack the chest to remove the rust. Open the chest. Get the bottle of oil and the axe. Out. Down.
- 16 Outside the tower: open door. Out. East. Out (through the gates which were forced open by the wagon).
- 17 Outside the ruins: SW. Up. North across the gap (but only if it's daytime).
- 18 Inside the small cave: in. Operate the rocks to reveal a skeleton. Take the vest. Out. South. Down. East.
- 19 At the foot of the tower: East. You fall into an animal trap pit. Take the sword. Attack snake with sword. Take cloak. Up. SE.
- 20 Beneath the willow tree: operate the ground in front of the tree. Take white crystal. West. Get gold ring from the hole by the dead hunter. Wear gold ring. East.
- 21 Beneath the willow tree: East. East. East. East (to broken bridge). Wait until bird arrives. Throw an object at the bird (if it's day time). Take the diamond. Attach the diamond to the ring ie. operate ring with diamond.
- 22 At the broken bridge: West. North. Wait for wild pig to appear. Attack pig with sword. Run north. Run NE.
- 23 Along the forest path: attack bandits with sword (to rescue Jack the lad). NE. NE.
- 24 Outside the wooden shack: move the water trough (double-click) to reveal a trap door. Open the trap door. Down.
- 25 In the cellar: take small key from the dead man. Unlock drawer with small key. Open drawer. Get antidote. Up. Open door. In.

- 26 Inside the shack: get wooden key from top of cupboard. Unlock cupboard with wooden key. Open cupboard. Get the food. Take hammer.
- 27 Inside the shack: use the Goto feature on the map to return to the broken bridge. Attack tree with axe. SE.
- 28 At the river's embankment: SE. Give Jack a knife. Send Jack up the tree. Throw the knife at the window to kill the wizard. (Note: if you didn't run to rescue Jack in the forest he might well miss or collapse from his injuries at this point. For extra insurance, make sure he is wearing the robe from the animal trap pit where the snake was.) In.
- 29 In the Wizard's study: down. Open door. Get rest of party in tree. Up. Jerub should cast the detect spiritual matter spell. Open the chest – someone should be wearing the necklace. Take claw from chest. Remove the grey crystal from claw.
- 30 In the Wizard's study: get silver key from dead wizard. Unlock drawer with silver key. Open drawer. Get scroll from drawer. (Note: there are two scrolls – Jerub should only take one of them and examine it. One is a spell, the other kills him.) Out. Out.
- 31 In the forest: NW. NW. W. NW. (Note the location of the cave – you must return here once you have found the other spell scroll, as detailed in points 32 onwards.) NE. E. Either throw a heavy item at the cliff wall and then take the fossil or just take the fossil from the ground.



■ "That's right, bend over! Now pull down – oh, are we on? Er – let's just put this bench over here, shall we? Good. Okay." (Embarrassed silence)

- 32 At the foot of the cliffs: SW. S. NE. NE. N to the three way junction. Go NE to find the boat. Operate the boat with a hammer to mend it. In. (Note: only one character can fit in the boat.)
- 33 Sailing upon the lake: NE. South. Out. South. Operate the mechanism with the bottle of oil. Operate mechanism again. North. In. South. Out. Wait for Hermit to appear. Wait for Hermit to awaken. Talk to Hermit. Give Hermit fossil. Look in tree hole. Take pouch. Get green crystal from pouch. In. Take staff from bed. Break the staff to find a spell scroll. Out. South. North. Use the game map system to return to the cave entrance.
- 34 Outside the cave: attach the rope to the large boulder. Pull on the rope to move the boulder and reveal a hole. Down. Light a torch with the tinder box. North.
- 35 At the edge of the pit: Jerub must cross the pit. He must also have all eight spells available to him. If he's not brave enough to cross then get him to cast the bravery spell repeatedly until he is. North. North. Cast the Destroy Serpent spell (the last spell) to kill the serpent and reveal stepping stones.

- 36 Inside the huge cavern: North. Cast Detect Underworld spell (second spell). Look in the column of flame and take the blue crystal. Use map system to return to the cave. Out. Use map system to return to the wagon in the forest.
- 37 Along the forest path: NE. North. East. East. Up (the mechanism chain). Up (only when it's night. Don't carry a lit torch either!) East. Unravel the vest (double-click) and give it to Crysella. Get Crysella to shoot an arrow at the rope bridge. East (across the mended rope bridge).
- 38 Outside the Suzar's castle: in. Get Jack to go up through the gap at the top of the door. South. Pull the lever. In. Pull the lever. Out. Out. Get the metal key from the dead humanoid. Use the map system to return to the Courtyard.
- 39 Corner of the Courtyard: North. Unlock the gates with the metal key. Open the gates. Get Crysella to shoot three times at the target. Take bottle of fruba. SE. Open the trap door. Down.
- 40 Within the mucky sewers: South (if water level is not high because of excess rain). Up (through the toilet!). Open drawer and take iron key. North. Jack must bend the iron key first. Unlock door with iron key. In. Talk to man. Attack man and kill him. Get black key from dead body. Out. South.
- 41 In the guard house: South. East. Up. North. West. Take ivory key from the hook. Unlock door with ivory key. Open door. South. West. Open door. Attack the humanoids with a weapon. Take the shiny key from the dead humanoid. In.
- 42 Inside the great hall: get Crysella to examine the walls. Up. Open doors. North. Attack humanoids with sword. Get the glove from the dead humanoid. Wear the glove. East.
- 43 End of the passage: use the glove to dispel the barrier. East. Attack the door twice to break it down. In.
- 44 In the bedroom: look in the bucket and take the magical staff. Move the painting. Unlock chest with black key. Take magical shield and magical sword. (Note: do not take the black crystal – this damages the magical staff if you try attaching it). Down, one character at a time.
- 45 At a three way junction: take platinum key from the dead body. W. S. W. N. Up. N. E. N.
- 46 Within the passage: unlock the door with the platinum key. Open door. In.
- 47 In the dining hall: operate the mechanism. Down. Take food. Out. W. Operate the statue to open the doors. In.
- 48 Inside the great chapel: attach all five crystals – yellow, grey, blue, green and white – to the magical staff. Open the curtains. D.
- 49 In the secret tunnel: drop the magical shield to trigger the trap. Get shield. E. Open the sarcophagus lid. Throw a lit torch at the mummy. Get the glass ball from the coffin. Break the ball by dropping it. Get the red crystal. Attach the red crystal to the magical staff. Attack the giant sphere with the magical staff. In.
- 50 In the depths of Hell: attack Suzar with the magical sword three times. Now run to the cave at the foot of the basket or the bridge before the castle collapses! (Use the map system and the Goto feature).

THE END! – But be here next issue for some general tips to help you get through the battle in one piece!

I Think... ...Therefore Impressions

COHORT – FIGHTING FOR ROME

- "While Cohort has plenty of historical detail, its colourful graphics, entertaining animation, imaginative use of sound and flexible icon controls are what really makes it." (890 ACE June)
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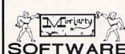
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LIFE continued from page 79

N (plus a key 1-9) – go to that level
T – extra time

VENUS THE FLYTRAP**Gremlin**

Press the <Undo> key and keep it held down

until the words CHEAT ON appear. You now have infinite energy.

Level codes:

MANDTIDS – Frozen Wastes
CICADAS – The Dead City
PSYLLIDS – Wood World
PIERIDS – The Kaverns

SATYRID – Death Valley
LYCAENID – Creeping Swamp

OR! instead of entering the level codes type:

JUPITOR for infinite time
PLUTO for infinite ammo
FREEPLAY for infinite credits
LISTEN for a sound test.

CARRIER COMMAND**Mirror Image**

Since this exceptional game has just been re-released, we thought it was worthwhile to reprint some tips for new players.



■ Collect the grapefruit before slicing the dwarf in two at point A with the harpoon after you've used the knife-sharpener you bought from Derek the Abnormal Grocer – oh sorry, wrong caption

MANTAS

Have all of your Mantas individually armed: Manta 1 should have one missile, Manta 2 a laser gun and a missile on each wing, Manta 3 a bomb pod and two missiles, and finally Manta 4 a long range comms pod and four missiles. In flight, set the Mantas' altitude low so that they gain speed. As you're travelling between the islands send Manta 4 ahead of you to attack the island you're heading for.

AAVs

Never send a Walrus AAV out without adequate air support. Use an AAV fitted with a laser to destroy the enemy's defences and then attack the Command Centre.

THE CARRIER

Remember, you get maximum speed when travelling only by withdrawing all the inflatable drones and only then when you're in deep water. It's best to have only the Engines, the Repair Systems and the Superstructure on high priority repair. Make a stockpile after conquering every two or three islands – that way you don't have to wait too long for all the stock to be transferred between islands. Fuel priorities ought to be: Ship – High, Manta – Medium, AAV – Low.

ATTACKING AN ISLAND

There are basically two ways to attack an island. The easiest way is to send in a Walrus armed with a Virus Bomb to subvert the island's command centre, assuming you want to keep the same type of island. You must make sure you have a diversion of some sort, though, or otherwise your Walrus gets destroyed before ever reaching the island.

The other way is to destroy the Command Centre altogether. You can do this from the safety of your carrier by backing up to the island (not too close or you activate the defence missiles on the island) and using the surface-to-surface missiles from your ship. It takes about seven missiles to destroy the Centre.

Bottles of champagne to Sammy Simpson and Eric Ketts of Bath.

CHIP'S CHALLENGE**US Gold**

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ST PRIZE

Right. No messing about now. A certain N H Crowhurst of Stockport has completed the whole darn game and has level codes for every one of the 144 stages. So here we go...

LEVEL NAME	CODE	CHIPS	TIME						
1 LESSON 1	BDHP	11	100	34 CYPHER	NQFI	14	350		
2 LESSON 2	JXMJ	4	100	35 LEMMINGS	VDTM	10	600		
3 LESSON 3	ECBQ	4	100	36 LADDER	NXIS	28	350		
4 LESSON 4	YMCJ	9	150	37 SEEING STARS	VQNK	56	800		
5 LESSON 5	TQKB	0	100	38 SAMPLER	BIFA	1	500		
6 LESSON 6	WNLP	4	100	39 GLUT	ICXY	29	20		
7 LESSON 7	FXQO	3	150	40 FLOORGASBORG	YWFH	0	200		
8 LESSON 8	NHAG	1	100	41 I.C. YOU	GKWD	60	250		
9 NUTS AND BOLTS	KCRE	9	400	42 BEWARE OF BUG	LMFU	27	300		
10 BRUSHFIRE	VUWS	0	80	43 LOCK BLOCK	UJDP	0	200		
11 TRINITY	CNPE	3	300	44 REFRACTION	TXHL	32	300		
12 HUNT	VVHI	652	400	45 MONSTERLAB	QVPZ	0	300		
13 SOUTHPOLE	OCKS	0	—	46 THREE DOORS	HDQJ	14	250		
14 TELEBLOCK	BDY	4	250	47 PIER SEVEN	LXPP	4	300		
15 ELEMENTARY	COZQ	12	250	48 MUGGER SQUARE	JYSF	6	300		
16 CELLBLOCKED	SKKK	0	—	49 PROBLEMS	PPXI	23	200		
17 NICE DAY	AJMG	46	100	50 DIG DIRT	QBDH	16	350		
18 CASTLE MOAT	HMJL	0	600	51 I SLIDE	IGGJ	13	750		
19 DIGGER	MRHR	146	210	52 THE LAST LAUGH	PPHT	2	400		
20 TOSSED SALAD	KGFP	15	400	53 TRAFFIC COP	CGNX	0	500		
21 ICEBERG	UGRW	9	150	54 GRAIL	ZMGC	68	350		
22 FORCED ENTRY	WZIN	8	300	55 POTPOURRI	SJES	30	100		
23 BLOBNET	HUVE	88	500	56 DEEP FREEZE	FCJE	8	250		
24 OORTO GELO	UNIZ	48	550	57 STRANGE MAZE	UBXU	35	400		
25 BLINK	PQGV	28	600	58 LOOP AROUND	YBLT	9	600		
26 CHCHCHIPS	YUYJ	170	366	59 HIDDEN DANGER	BLDM	8	400		
27 GO WITH THE FLOW	IGGZ	6	200	60 SCOUNDREL	ZYV	12	294		
28 PING PONG	UJDD	22	300	61 RINK	RMOW	16	—		
29 ARTIC FLOW	QGOL	5	400	62 SLOW MO	TIGW	0	300		
30 MISH MESH	BQZP	36	600	63 BLOCK FACTORY	GOHX	7	500		
31 KNOT	RYMS	118	29	64 SPOOKS	IJPQ	41	600		
32 SCAVENGER HUNT	PEFS	3	600	65 AMSTERDAM	UPUN	51	500		
33 ON THE ROCKS	BQSN	9	—	66 VICTIM	ZIKZ	12	300		
				67 CHIP MINE	GGJA	28	700		
				68 EENY MINY MOE	RTDI	52	650		
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				70 NIGHT MARE	GCCG	0	199		
				71 CORRIDOR	LAJM	23	500		
				72 BLIND ALLEY	EKFT	35	—		

That's the first half – last 72 levels next month (if you're good).

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Yep! Tints, hips, peaks, chokes – all those silly words you type in to get infinite blancmange and higher scores – we want them all! If you've got a tip, a cheat, a short cut, an infinite lives poke, a password, a map – anything at all you've found that helps you get more from your ST game-playing – we want to hear about it! That way you can share your information with well over 60,000 fellow ST enthusiasts, and possibly win *FORMAT's* monthly prize of £50. It doesn't have to be a complete solution or anything – whatever you've got could be the answer to a fellow ST game-player's prayers!



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Address _____

Daytime phone _____

Brief description of tip _____

Please complete this form and send it, along with your tip, to: **Gamebusters, ST FORMAT, 30 Monmouth Street, Bath BA1 2BW.**

SHADOW OF THE BEAST

Psygnosis

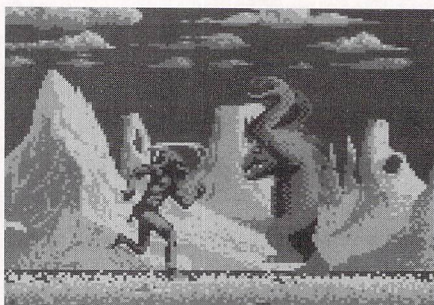
Old game it may be, but since it's just been included on the Monster Pack compilation, here's the complete solution for all newcomers to this horizontally-scrolling arcade adventure shoot-'em-up... from Michael Attisha of Hull.

Go left until you reach the treehouse and enter. Once inside, go right, jumping the fireball, and go down the ladder in the floor. Keep following the passage until you kill the blue creatures and drop down off the ladder afterwards. From there, take the left ladder down and then go down the ladder after the bridge. Go right, killing all the creatures, then down the ladder. Now left until you reach the creature holding the blue ball. Go right up close to it and duck. Whenever he stops breathing fire punch the ball as many times as possible. Eventually the ball should disappear and you're left with a super-weapon. Backtrack to the right, go up one ladder and down the next before going down the next two. Proceed left, taking the top passage; take the key at the end. Return to the same area in which you got the super-weapon and enter the transporter.

In your new surroundings, go up the left ladder and continue right. A block appears behind you, barring your way, and a huge grey cart starts trundling toward you. Using the super-weapon, shoot the cart over and over again, ensuring that it doesn't touch you – if it does you're dead. After you've destroyed it run right and take the first ladder up. Go left, past the ladder, until you come across the switch

that says "Don't touch." Touch it. Return right and go up the ladder you passed just now.

Walk right (yes, right through the wall) and duck and punch the two chests, which break open to reveal strength potions. Collect them



■ "Ere, can you do this?" (Raises arms.) "No, but I can stand on one leg for three hours without moving." "Oh. Nights are drawing in, aren't they?" (Pathetic End To A Caption Number Seventy-One)

and run left as far as possible, avoiding the Hydra, to collect the key. Work your way back down the two ladders and walk right. Keep following the ladders and passages past the bomb-dropping bees and down the ladder. Go left as far as possible, then up the ladder and right, collecting the Power Punch. (By the way,

the "Don't Touch" switch you touched earlier negated an energy field around the bottle.) Go left and down the ladder to the bottom and walk right until you reach the dinosaur. Using the power punch, hit it repeatedly until it dies. Continue right through the door. One of your keys is used and you emerge in the well. Climb up the iron rungs and get out.

Run right, punching the stone blocks and collecting the bonuses, until you reach the castle. Collect the torch to the right of the door and enter. Climb the ladder to the left and follow the passages and ladders until you come to two passages going left and right. Go right and collect the spanner, then left until the end. Keep following the tunnels again until you drop off a ledge to the right which puts you back at the entrance. Run left following the passage again. Eventually you should fall off a ladder onto a bridge. Run left and punch the chest. Collect the gun, run right and walk into the laser beam. Your remaining key and the spanner are used, disabling the beam. Go up two ladders and run right. When you come across the three-headed dragon, shoot it in the head(s) by jumping while shooting. It flashes white when you hit it.

Fly along the tunnel until you reach the creature at the end. It has two faces: destroy each one and you're through to the next part. Keep running right, killing all the creatures as you go. Hitting the gravestones results in either a strength bonus or a penalty. Finally, kill the Beast at the end by striking his foot and avoiding his club, and that's it! You've mastered the Beast! Nothing to it, really... **stf**



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Gravis MouseStick**MACHINE:** ALL STs**PRICE:** £69 + £1.50 p & p**FROM:** RC SIMULATIONS**CONTACT:** 0272 550900

We're all used to the technological advances which make your ST a special machine, so why do we still use a switch joystick – a device created some ten years ago? The standard joystick's limitations demonstrate exactly why the Gravis MouseStick is such a neat idea.

Inside any ordinary joystick are five on-off switches. One is linked to the Fire button and simply indicates whether the button is held down or not. The other four are placed around the joystick's central shaft, one on each side, and these open and close according to the position of the shaft. Push the joystick forward and one switch closes, leaving all of the others open. The software can then work out which direction you're indicating, and react appropriately. Simple, but effective.

However, a switch joystick cannot give the software any indication of how far you're pushing the stick – all it knows is that you're pushing in a specific direction. It can't even tell how quickly you change direction. The software has to do this by setting up timers and repeatedly checking the stick to examine your speed of movement – processor-intensive stuff.

The Gravis MouseStick is different. Inside, it has a number of analogue-to-digital converters, rather like those in a mouse. These can tell just how far the stick moves. Rather than indicating simply "Up is selected," it can show that the stick is "35 units Up" for instance. You can program the two main axes, horizontal and vertical, to have a scale suitable for virtually any mouse or joystick-compatible software.

The system comes in two parts: an interface box, which has a lead with a standard 9-pin D-type plug for inserting into the ST's mouse or joystick sockets; and an analogue joystick, which plugs into the interface using a tiny connector. Both are moulded in grey plastic which blends reasonably with your ST. The interface is the key to the system. Its microprocessor handles the decoding of the analogue stick and outputs user-defined, ST-compatible information. It indicates its current set-up via an LCD display and enables you to redefine your own.

You do this using the joystick. Select the configuration editor mode and various headings appear in the display. You can store or recall a MouseStick set-up, program one of the three buttons, change the output mode from joystick to mouse or change the scaling in any direction.

While it may not appear easy to use or set up, the procedure is in fact very intuitive. Altering the scaling on an axis affects the rate at which data is sent back to the ST, effectively changing the responsiveness of the stick. Programming one of the buttons enables you to emulate any of the standard mouse buttons, provide a trim (for precise adjustment of the direction) or a vector (for maintaining the same

Get things under control



Most new joysticks are just old sticks in crazy cases.

Neil Jackson looks at one that really does give you more joy and less stick

direction, regardless of stick position) as well as create turbo-fire control.

Joystick mode enables you to mimic a standard eight-way joystick, while mouse mode enables you to use the MouseStick in the mouse port. If the idea of setting up your MouseStick every time you load up a game sounds complicated, fear not. There's a programmable startup mode which is automatically selected on power-up. This can be one of the main presets or one of your own set-ups – it's entirely up to you and takes only seconds to change. Obviously this auto-preset can't do everything, so there are three other programmable "slots" for your favourite configurations. You can be up and running with very little fiddling about – or leave the MouseStick plugged in and it could save you from having to hunt for those ridiculous ports under your ST!

Mechanically, the MouseStick is obviously built for long life and hard use. It has a padded handle, adjustable stick tension (eight settings), and enough weight to stand upright on its own. You may have trouble holding the base in one hand – it's better left on a table-top – but it does have rubber feet to stop it sliding around.

The MouseStick is a versatile device that opens up plenty of possibilities. Many games already cater for it, and as the device grows in popularity more programs are bound to feature enhanced control modes. Then you can experience what's been missing from even the best flight sims – true feel and total response.

For your money, you also get a manual, a handy record-sheet of presets and an excellent note from RC Simulations providing all the set-



■ The Gravis MouseStick is the kind of control device your ST has been waiting for. With this remarkable device, you can achieve unprecedented accuracy in flight sims, driving games, even art packages and spreadsheets

up data needed to interface the MouseStick to a variety of games – including *Falcon*, *F-19 Stealth Fighter*, *MiG-29 Fulcrum*, and *F-29 Retaliator*. Full marks to Gravis and RC Sims for this excellent device. It may be a wee bit expensive, but it's worth every penny. I'm giving up my faithful Kempston Pro, which has served me well since 1981, so it must be good. **stf**

FORMAT RATINGS

GRAVIS MOUSESTICK/£70.50
RC Simulations/0272 550900

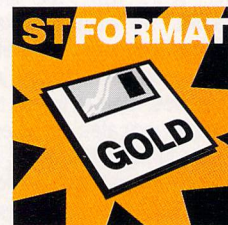
Features	95%
More modes than a kitchen blender	
Speed	96%
More responsive than a joystick and more precise than a mouse	
Ease of Use	85%
A little tricky at first but simple once mastered	
Results	98%
Flawless! No compatibility problems, no quirks, just total control	
FORMAT VALUE	90%
The price is a bit steep, but it's definitely worth it for all these features	

The Competition

There's nothing comparable, though certain companies are working on variable joysticks for the STE

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Tired of your ST's boring old Desktop? NeoDesk from Electric Distribution does a much better job. Enter our competition and you could win this and much more – in all, over £1,000 worth of software!



It's a winning combination! The biggest-selling DTP package for the ST, *Timeworks Publisher ST*, **plus** the professional ST word-processing package, *1st Word Plus*, **and** Utility of the Year 1990, *NeoDesk 3* – that's the fabulous first prize in *FORMAT*'s really easy to enter competition.

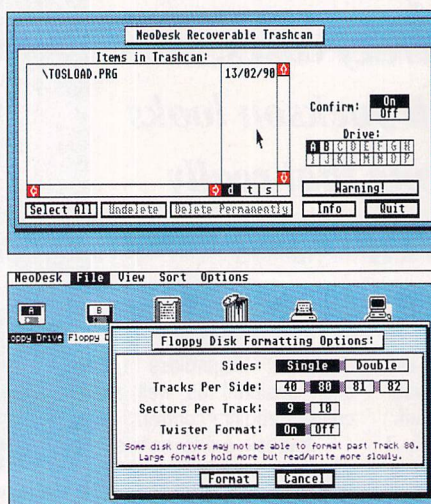
GST Software Products' *Time-works Publisher ST* and *1st Word Plus ST* together with Gribnif's *NeoDesk 3* add up to a great first prize – worth over £200.

And there's more! The two runners up will each receive a copy of *1st Word Plus ST* and a copy of *NeoDesk 3*, and there are copies of *NeoDesk 3* for the next 17 names out of the hat!

And finally... Electric Distribution have supplied 500 interactive *NeoDesk 3* demo disks – not available in the shops and including many features of the full version – free to the first 500 people who enter our competition! *NeoDesk 3*,

which is available exclusively in the UK through Electric Distribution, combines powerful graphical features and drop-down menus. It can transform the use and appearance of your Desktop with personalised Desktops, automated Desktop operations and intelligent use of disks. We reviewed it in issue 18 and gave it a *FORMAT* Gold, with the quite

dazzling score of 95% – and it was voted Software Utility of the Year 1990 by none other than you, our readers! The interactive *NeoDesk 3* demo disk also includes a demonstration of *NeoDesk CLI*, a complete window-based command line interpreter.



■ *NeoDesk 3* boasts an exhaustive number of options, giving your humble ST's Desktop more power than machines costing ten times as much

THE RULES

1. Employees of GST Software Products, their sales division Electric Distribution, Gribnif, or Future Publishing are not eligible to enter. Neither are their families. Nor is anyone called Malcolm Gribnif, regardless of whether he is Secretary of State for Scotland or not.
2. Entries must be postmarked 30 July at the latest. "Clocking" your own postmarking machine is forbidden and probably impossible anyway.
3. Anyone submitting multiple entries will not only be disqualified, but we'll also get Powergen to distribute some electric through your delicate bits.
4. No cash alternatives can be offered. Not that you'd be entering if you wanted mere money, right?
5. The Editor's decision is absolutely and incontrovertibly final. Probably.

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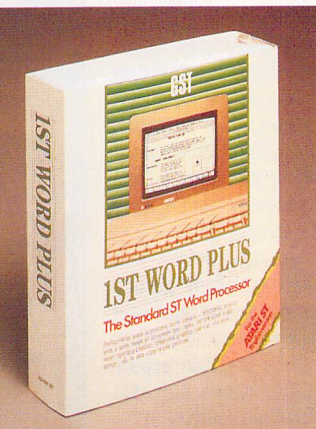
It really is so easy! To enter, just answer the following three questions!

- 1 Which UK company is responsible for the development of *Timeworks Publisher* and *1st Word Plus*?
- 2 What's so special about the trash can in *NeoDesk*?
- 3 *NeoDesk* offers several disk formatting options. What is the *minimum* number of tracks you can format in *NeoDesk*?

Send your answers on a postcard or the back of an envelope before 30 July 1991 to: *NeoDesk 3* competition, *ST FORMAT*, 29 Monmouth Street, Bath, Avon BA1 2AP.



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THE KANDY KOLoured TANGERINE FLAKE PICTURE STREAMLINED SHOW

What did Leonardo da Vinci have that you don't? Nothing – except a beard (probably), a penchant for ugly women and some wacky ideas about flying machines, that is. Ed Ricketts gazes in awe at your pixels

Welcome once again to the KKTFS: more pixel punching from those magnificent readers whose brain lobe marked ART is, to say the least, not small. In other words, some more of your pictures.

"Yes, all very well," I can just about hear you cry if I listen very very carefully, "but aren't they all professional art bods who have spent thousands of hours slaving over a hot ST and a £400 colour monitor?" No, no and again no! (Er, except for the special feature below, in which case the answer is a definite maybe.) As we always say, you don't need to have any special

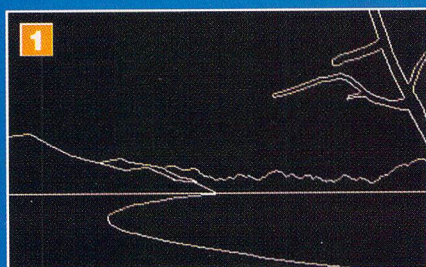
equipment to produce a decent picture. An ordinary TV, your ST and an art package will do just fine. And just because many people use Degas Elite or Deluxe Paint for their work doesn't mean to say you have to – use whatever package you feel most comfortable with. It's the end result and how you got there that's important.

For a better chance of your work appearing on these hallowed pages, here's what to do. While you're drawing/painting/airbrushing/anti-aliasing/scribbling your meisterwerk, save the various stages of creation. That way you get a series of pictures that build up from a bare out-

line to a full-blown rival of the Sistine Chapel, which is good for you, good for us and good for the future of Britain (in an incredibly complex and inexplicable sort of way).

Then, when your artistic frenzy is complete, send a disk you don't mind losing (which, of course, must be virus-free and self-addressed) with the various piccies together with an explanation of what you did and how (either printed or as an ASCII file) to GALLERY, ST FORMAT, 30 Monmouth Street, Bath, Avon BA1 2BW. And remember: never open an umbrella indoors – it's bad luck. **stf**

HOW THE FLAMES OF FREEDOM CAN TRANSF



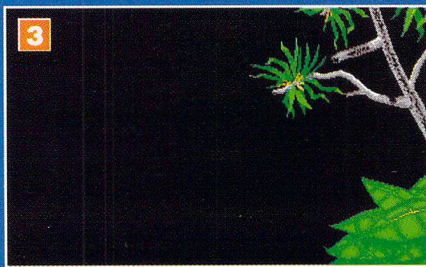
And now: something a bit out of the ordinary. While we wait in breathless anticipation for *MidWinter 2: Flames of Freedom* to finally rear its head, we have some title screens from the game, drawn by Maelstrom's ace graphic artist, Andy Elkerton. Mike Singleton, head honcho, explains...

"Usually, an artist working on a computer game has many restrictions placed upon him by a combination of programming and memory requirements. The title sequence, however,



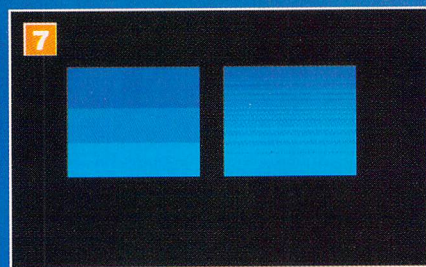
is one area where the artist has more freedom to splash out. The title sequence in *Flames of Freedom* is just such a case.

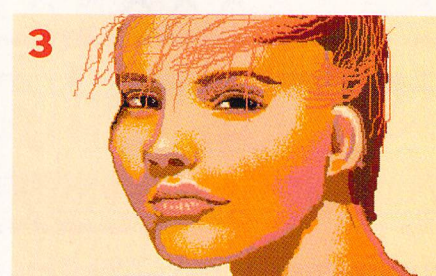
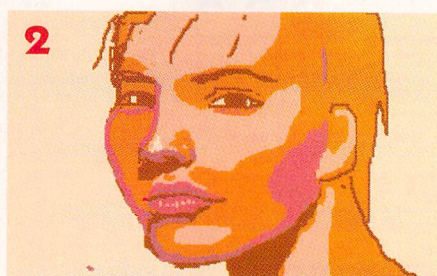
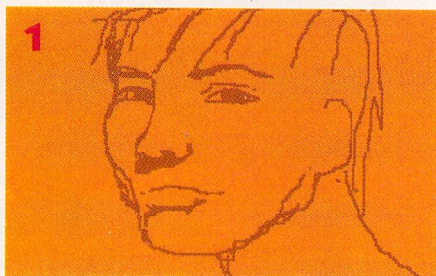
"Andy had three distinct elements to create before the programming team could put the full sequence together. First we needed *Flames of Freedom* lettering, preferably animated, to be displayed while the main game loaded. Then we needed an animated scene complete with moving solid graphic vehicles and a bit-mapped backdrop to run the credits over, cinematic style. As well as han-



dling all the normal bit-mapped artwork, Andy has spent a lot of time with our solid graphics system and has designed and coded all the solid objects in *Flames of Freedom*. Having an artist rather than a programmer doing this makes a vital difference to the final look of the vehicles – they tend to be rather less cubist than is customary!

"In the title sequence we used a total of four different vehicles, a biplane, a helicopter, a hovercraft and a balloon, each of which took Andy about two days to design, construct and





A GOLDEN GIRL

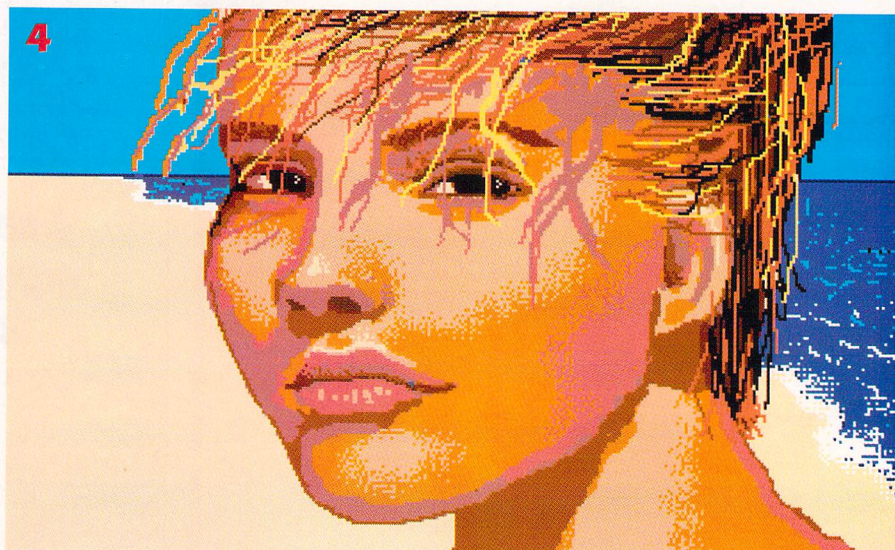
Suzanne Barberton of **Wiltshire** used the PD program **NeoChrome** for her rather good-looking portrait. Suzanne doesn't say if it's drawn from life or her imagination – either way it's an excellent portrayal of an always difficult subject, the human face. It's all yours, Suzanne...

“I decided to draw a face because I was totally sick of drawing cartoon characters and mechanical things.

1. I began by using quite a thick brush to sketch the outline of the face in a neutral colour, using Fill to colour the face and background.

2. The same brush was used to draw the light and shade in solid panels. I find this is good practice for conventional art since it makes you look at an object as a collection of colours and shades, which makes it easier to draw.

3. Next I went over the whole picture to neaten it – correcting uneven lines, straightening the nose, and carefully redrawing the ears and eyes. To blend and soften all the harsh lines between the varying flesh tones I used the two sizes of airbrush.



4. The final touch was the hair, which was easy – I used the pencil and just scribbled blonde highlights over a dark background. The sea in the background was put in as an afterthought,

using the airbrush to texture the plain blue.”

■ **NeoChrome**, a Public Domain program, is available from your nearest PD library – see **FORMAT's** comprehensive directory, page 100

FROM MIDWINTER TO THE SUNNY CARIBBEAN

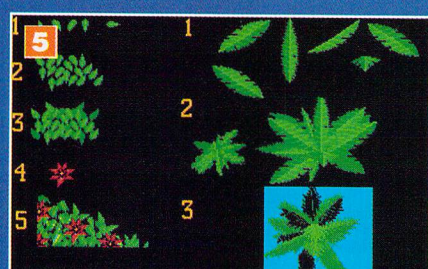


test. Now I'll let Andy explain just how he went about his tasks.”

“The idea behind the Bay Scene was to provide a nice, animated backdrop for the game credits at the beginning of *Flames of Freedom*. I drew the picture using *Deluxe Paint 3* on the ST, but because different types of aircraft were going to perform a ‘fly past’ across the bay, I was restricted to drawing it in the palette which had already been chosen for the 3-D solid objects. If possible, I prefer to draw pictures like this straight from life, since it saves making guesses about how something really looks, so with the help of a handful of holiday brochures I set to work.

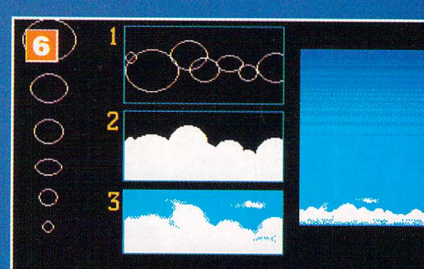
1. First, I tackled the background. I drew this purely to give me a rough idea of how the final layout of the picture would look.

2. Because the biplane and other vehicles were going to need lots of space to barrel-roll



and generally fly about, I placed the horizon line quite low down so there would be a predominance of sky, and then added the clouds in the distance to soften the dark blue line made by the sea. The areas of darker blue in the sea were used to create the impression of depth, or even coral underneath the water. The line of trees running along the beach was created using quite simple techniques. A long dark-green blob of colour provided the basic shape of all the trees, and then by using the stipple function I added two lighter shades of green to give a degree of shape and highlighting. The lowest area of each tree's foliage was left dark green to give the idea of shadow.

3 & 4. To give the picture more depth, foreground objects were going to be needed. Trees were the obvious choice! The foreground trees were drawn separately from the bay, because in the final picture they needed to be printed last so that planes are actually seen to be flying behind their branches and leaves.



5. To save time, the bush in the bottom left hand of the picture was drawn from four basic shapes, each of which I grabbed as a brush and then rotated through 90 degrees to add variation to each.

6. The line of clouds was made up using a row of varying sized circles, which I then filled with white and stippled the edges to soften them against the blue of the sky.

7. The three shades of blue which make up the sky colour needed to be stippled to show a more pleasing colour graduation.

8 & 9. All that's needed is to put all these different elements together and you've got a completed background. In the final picture here, the biplane is flying over the scene, complete with shadow.”

■ **Deluxe Paint 3** £49.99 from Electronic Arts ☎ 0753 49442. Keep an eye out for *MidWinter 2* sometime this year. Possibly. If you're lucky.

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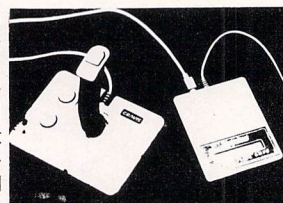
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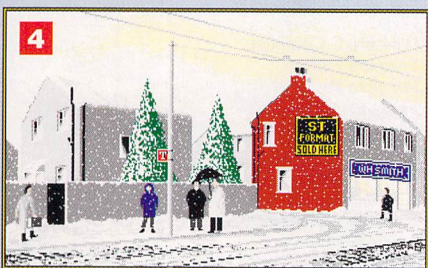
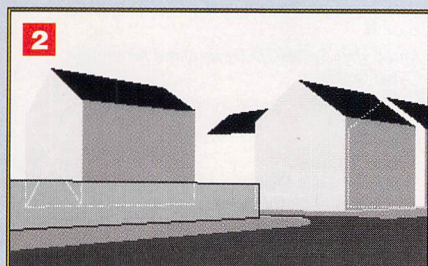
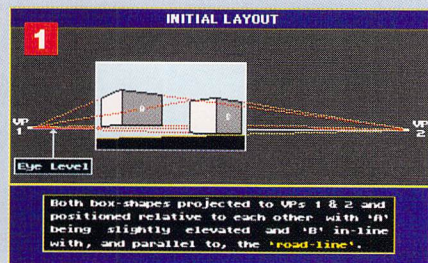
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TRAM IS AN ANAGRAM OF ART...

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...with an extra M. Should **Keith Markland** of **West Yorkshire** soon be in need of £25 he's in luck because he's this month's prizewinner. Keith says the winter's cold spell inspired him to produce his drawing, "Tram Stop."



I used *Degas Elite* with a Naksha mouse. A top quality mouse is essential to execute intricate pixel patterns, so Atari's model isn't much use. The whole picture took a total of around 30 hours to complete.

1. This illustrates how I positioned two carefully proportioned box shapes representing buildings in relation to the road-line and to two vanishing points (VPs). Placing two VPs too close together tends to distort the objects, so they were situated about 6-12 inches off the monitor screen.

2. I added two boxes to the originals and gave them all roofs. Note how I fixed centre points for the four roof ridge lines which were then projected, along with the garden wall and pavements, to their respective VPs. Your eye instinctively follows a left-to-right path across the picture.

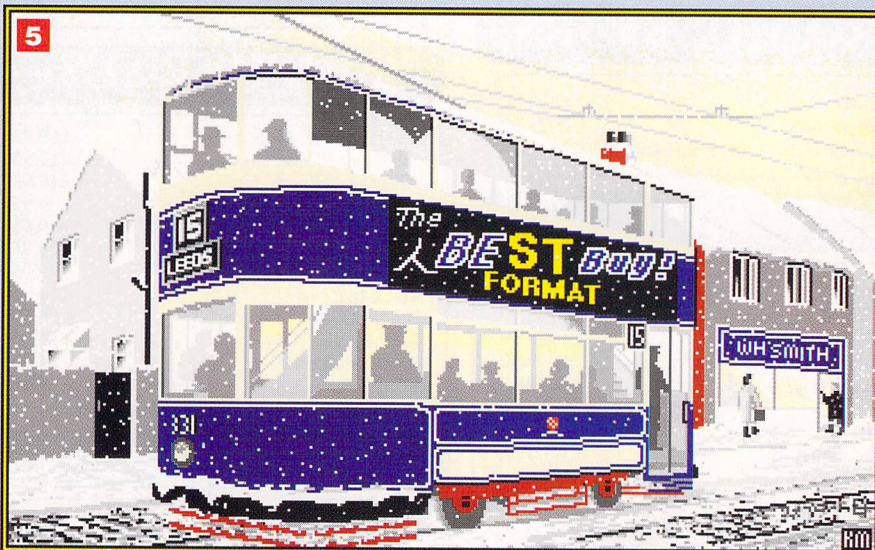
3. Initial detail has been added. Most of the details were drawn from memory, though I had to draw some from life. The shop signs were drawn freehand, no suitably sized fonts being available. A major focal point, the trampoline, was placed just off-centre. Four shades of grey were used to add contrast and depth, and a brick red wall and two darkish green trees to relieve the overall greyness. Next, dispensing

with outlines, I drew in and shaded various details using up to six shades of grey plus black and white. Sky/cloud effects were added to give a bright impression, and people were inserted, having been predrawn on screen two, sized, and pasted onto the main picture. Two of the figures were drawn depicting movement to increase interest.

4. Snow effects were added using the Stipple function set at 5 with a single pixel-sized brush for snowflakes and Magnify for more detailed work on the trees and buildings. Partially exposed cobblestones were drawn to add realism to the road surface, as were the vehicle tracks and footprints in the snow. Overhead wiring was added, its density being graduated to give the impression of fading away.

5. The eponymous tram finally arrives. This was also drawn separately and pasted into position, when the snow effects were added. I took extreme care to project the tram to the same VPs as the road and background buildings. Finally, after general tidying-up, the picture was completed.

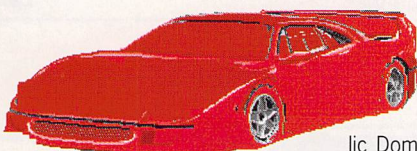
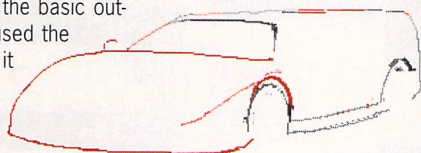
■ *Degas Elite* £24.95 Electronic Arts ☎ 0753 49442. If you want to save £5 on the Naksha mouse and get yourself a free drawing tool worth £7.95 to boot, turn to page 126



MORE THAN A CAR-TOON

Marc Harper of **Dyfed** is obviously another car fanatic, judging by his pic of a Ferrari F40, which he did using *Hyperpaint*. Powerful and expensive cars seem to be the main subject for car art – what's wrong with drawing one of the many Minis or Volkswagens around just for a change? (Er, on second thought, don't answer that...)

1. Using Draw, I created the basic outline of the car in red and used the Zoom function to touch it up. I then worked out the basic colour palette for the car – mostly reds.



2. Next the car was completely filled with a shade of red. At this point I created the logo in a different program, *Fontkit 3* [a Public Domain program for editing and producing fonts], because *Hyperpaint* didn't provide suitable fonts.



function. The most difficult parts of the car to draw were the hubcaps – I managed them by copying the shades of grey on a milk bottle top!

4. Finally, I filled in the background with black and finished off the shading. Overall, the picture took six and a half hours to produce.

■ *Hyperpaint 2* (supports STE 4,096 colour palette and scrolling) £34.99 Atari ☎ 0753 33344



3. The bonnet of the car is subdivided into different shading areas using lines and then filled with various hues of red. I created the headlights by drawing a square and then elongating it with the Stretch

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After last issue's guide to getting the Flood character to respond to the joystick, we now have the chance to introduce violence. The first stage is to get our Flood character to move over the top of a background, thereby adding atmosphere to the game. Then we can take a look at how to kick-start our sprite into action by giving him the ability to fire. The way the shots work illustrates the kind of structures games use for their characters, bullets, explosions and so on.

Take a step backwards

The clear screen routine in the original program code has now been replaced with a background draw, mainly because it's difficult to make the shadows show up on a black background. A 64x32 pixel patterned block is repeated to make up the entire background. It's only drawn in two planes so that you can output it from Microprose's Art Studio using this method:

1. Set the BRUSH/SPRITE SIZE to 64x32.
 2. Draw the pattern in the first four colours only.
 3. Turn it upside down with VERTICAL FLIP (use the right button). The reason is explained later.
 4. Put it in the brush store.
 5. Use CONTROL 1 to set number of lines to 0 (which means all of them, 32 in this case) and select file output.
 6. Use CONTROL 2 to set the output byte to 3 (planes 0 & 1 only) and to select word format.
 7. Left-click on OUTPUT, left-click on the brush you want to output and type in the filename.
- Please note that the capitals above refer to the icon names in Art Studio.

If you're using Devpac 2 you can INCBIN this file into the program at line 941. If, on the other hand, you're using Devpac 1, you need to use another program to convert the data into DC.Ls and INCLUDE it at this point. Alternatively, you can just stick the lines of data in the source file as we have done (lines 941-956) in order to keep the number of files down.

DRAWING THE BACKGROUND

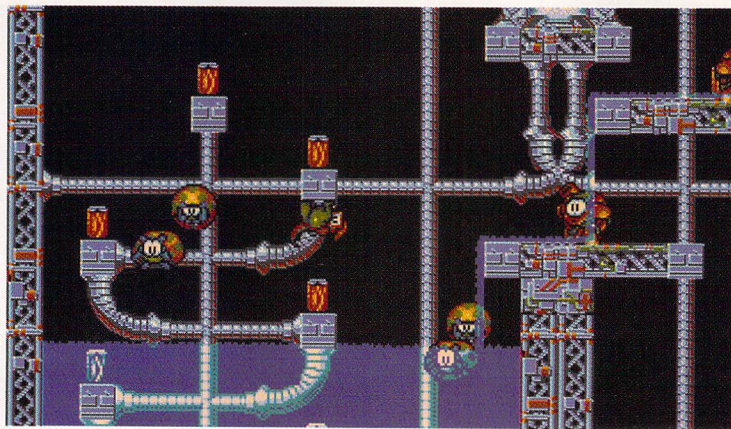
Do background

Since the screen is 320x200 pixels and the background is only 64x32, we have to copy it across the screen five times and down the

LOAD IT UP!

You can find all the files you need to use for the Bullfrogs' assembly language tutorial this month on our Cover Disk (see page 38). To find all three files for the series, double-click on the SIDE_2 folder and then on the BULLFROG folder name. These files are compatible with HiSoft's Devpac 1 (given away free on Cover Disk 22. To find out how to get your hands on it, turn to page 138.) For those of you who've fallen head over heels in love with Devpac 1, HiSoft also sell Devpac 2 – soon to be followed by Devpac 3. Contact HiSoft ☎ 0525 718181 for more details.

The SPRITE.S file in the BULLFROG folder is the main file which you need to load into Devpac 1. SPRITE32.DAT and SPRITE16.DAT are the data blocks which are called by the final assembled output file. Make sure these are in the same directory as your final output or it won't be able to find them.



■ The routines we're using in the Bullfrogs' assembly language tutorial form the foundation of Flood, their excursion into the cutesy platform game arena. Here you can see how manic the action becomes when you introduce a handful of bad guys keen on some shooting

Calling the shots



In the third part of FORMAT's assembly guide, Glenn Corpes of hit programmers Bullfrog shows you how to add firepower to your sprites

screen six times to get the full screen. 6 multiplied by 32 is only 192 and the screen is actually 200 lines high, but for the sake of speed I'm not bothering to do anything on the bottom 8 lines – you can probably use these later on for the score or status bar.

The first thing this routine does is to point six address registers at the screen. Notice that a0 points to the very bottom of the screen because we are going to use the pre-decrement addressing mode to draw the screen backwards; a1 points to 32 lines above; a2 to 64 lines above and so on, while a6 points at the graphic data. The macro routine "doline" draws an entire line of the screen with just five Movem commands. The destination is the parameter of the macro. The data must be stored upside down (as explained above) because while the data is read forwards a line (or 64 pixels) at a time, it's laid down backwards.

GUN-TOTING QUIFFY

The main addition to this month's demo is the ability to shoot. There's nothing to shoot yet but the structures and routines for moving the shots are similar to those for moving any aliens/monsters in a game, only much simpler. You must create the shot, move it and then kill it off.

The shot structure (defined line 53)

Every shot has eight variables, all of which are word sized because we've got bags of memory. This means that each shot takes up 16 bytes of memory. In Powermonger the people structures are 50 bytes long and any variable that you can squeeze into a byte takes only a byte. One thing, though: these variables tend to slow down the code slightly – they must be extended to a

word before you can use them. In Powermonger this saving is important because there are up to 512 people active on the map at any one time and the whole program takes up about 508K!

The variables for the shots in our cut-down version of Flood are:

SH_MODE	the mode of the shot, currently only 0 = not in use or 1 = in use
SH_X	the x coordinate of the sprite
SH_Y	the y coordinate of the sprite
SH_Z	the z coordinate of the sprite
SH_VX	the x velocity
SH_VY	the y velocity
SH_VZ	the z velocity
SH_FRAME	a counter for how long the shot lives, also used as an animation frame
SH_SIZE=16	the size of a sprite structure

The other variable names are there for clearer use of movems:

SH_ALL	all of the variables
SH_XYZ	the x, y and z coordinates
SH_VXYZ	the x, y and z velocities

It is always a good idea to stick in an extra label for this kind of thing because when you try and read your code several months or even weeks later you may not see the relevance of:

```
MOVEM.W    SH_X(a0), d0/d1/d2
but
MOVEM.W    SH_XYZ(a0), d0/d1/d2
```

obviously moves the x, y and z values into d0, d1 and d2.

Adding helpful readable equates and labels does as much for the readability of a program as decent comments. It's a good idea to have

virtually no numeric constants in your code. All right, so there are plenty of numbers lurking in the demo – but that's just because we're lazy.

The memory for the shot structures is located at the end of the program (line 1,007) and this illustrates another very good reason for using equates.

```
_shots    ds.b    MAX_SHOTS*SH_SIZE
           the shot structures
```

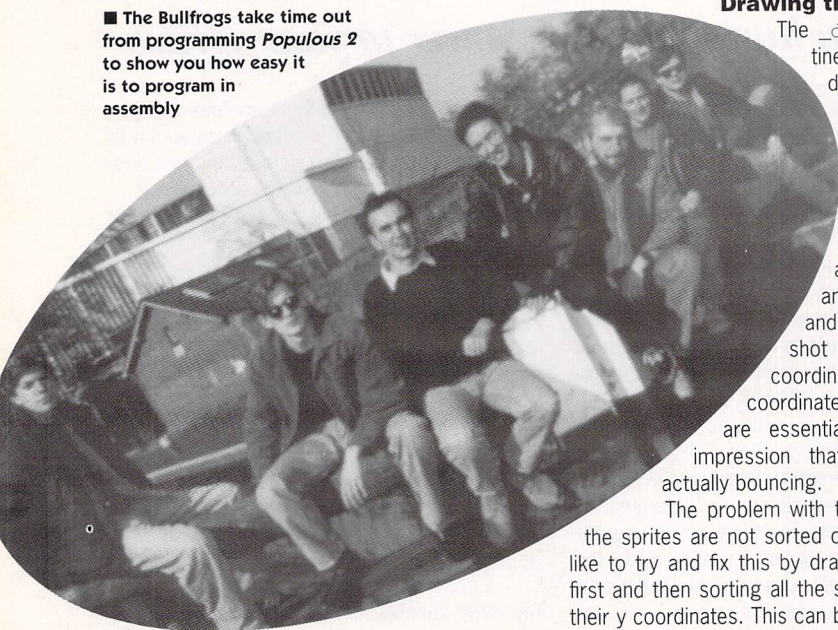
MAX_SHOTS is the maximum number of shots active at one time. Note that if the number of shots or the size of the structure changes then you don't need to change this line. You need to do this however if it said `ds.b 16*16` which is in fact the same thing.

The birth of a shot

A shot is made when you press the Fire button. In this instance, `_init_shot` (line 258) is called and it looks through the shot structures until it finds one with a mode of 0 (inactive). If it can't find one, the shot doesn't occur. If it does, it sets the shots mode to 1 (active).

The shot's coordinates are set the same as those of the player. The shot's velocity is also set the same as the player's, but with the last valid joystick movement added to the figure. It then sets the shots counter to SHOT_COUNT (256) which indicates the number of game turns the shot is going to be alive for.

■ The Bullfrogs take time out from programming *Populous 2* to show you how easy it is to program in assembly



The life of a shot

At every game turn, the routine `_move_shots` (line 282) is called. This looks at all of the shot structures in turn. If one of them is active it moves it by adding the x, y and z velocities to the x, y and z coordinates. The z velocity is decreased to simulate gravity (line 320) and it checks (line 295) to see if the z coordinate is negative. If it is, then it inverts the z velocity to make the shot bounce and decreases the x, y and z velocities to simulate a bit of friction and make the shots slow down. Eventually you find that they stop bouncing.

SH_FRAME is decreased and killed off when it reaches 0 by setting SH_MODE to 0. You may like to try adding more modes to the shot. At the moment there are only two options –

■ In *Powermonger* there can be as many as 512 people active on the map at one time. To be able to hold the necessary data for all these people, you really need to squeeze all your information into just a few bytes



0=inactive and 1=active – but you can add mode 2=bursting. Just write a piece of code that sets the SH_FRAME to a small number (say about 10), and then add some graphics for a bursting bubble. This code (which can't really be called a routine) needs to similarly decrease the SH_FRAME.

When it reaches zero, SH_MODE should be set back to 0 and the sprite killed off. This makes it available to `_init_shot` when it is called at the next press of the Fire button. Exactly the same method is used for processing the people in *Powermonger*, but instead of only two or three different modes they have 92!

Drawing the shots

The `_draw_shots` routine (at line 216) draws all of the shots after the main character is drawn. For each shot, it first draws a shadow at ground level according to its x and y coordinates and then draws the shot itself at the same coordinate but minus its z coordinate. The shadows are essential to create the impression that the shots are actually bouncing.

The problem with this routine is that the sprites are not sorted out at all. You may like to try and fix this by drawing the shadows first and then sorting all the shots according to their y coordinates. This can be a very slow process and there is a quicker way by using linked lists. Unfortunately it involves a major programming change. Go for it if you're sure you know what a linked list is!

Some constants to play around with

There are several constants at the beginning of the file which you can adjust in order to make some simple changes to the program.

ISOCONTROL

Remove the semicolon from the very first line in the listing and the control changes to a sort of pseudo-isometric. It doesn't really have much effect – but since the background graphic suggests isometric anyway, this succeeds in making it feel even more so. It also illustrates the use of conditional assembly (line 437).

RAPID_FIRE

Remove the semicolon from this line and the joystick automatically auto-fires when you hold it down. This is also achieved by conditional assembly and turning it on removes the code that checks to see if the Fire button is held down on the previous game turn. A shot is fired every other game turn and you can see the demo slow down from 50 frames a second to just 25 frames. This is because the sprite routine has to do an enormous number of shifts to draw each sprite, and shift is embarrassingly slow in 68000.

MAX_SPEED

The maximum speed of the player's sprite in pixels (multiplied by four). Make this number larger and the sprite zooms faster around the screen.

MAX_SHOTS

The maximum number of shots active at any one time. Try changing this to something like 128 with RAPID_FIRE turned on and see the demo really slow down. You can make the num-

“The structures for moving the shots are similar to those for moving aliens in a game”

ber of shots even larger, but remember each extra shot takes an extra 16 bytes of memory. This isn't so much of a problem because 10,000 shots only takes up around 160K!

BOING

This is the speed that the shots bounce at. If you increase this the shots bounce higher. Decrease it and they bounce lower and eventually just roll across the floor.

SHOT_COUNT

The length of time that a shot exists for. Not much point in changing this but you can if you feel you must!

That about wraps it up for this month. Next month, we get some simple monsters running around the screen and provide the code to make the shots collide with them. We can then put in some kind of scoring system to fill up those eight spare lines at the bottom of the screen, turning this into a very simple game. Be here and learn how it's done! **stf**

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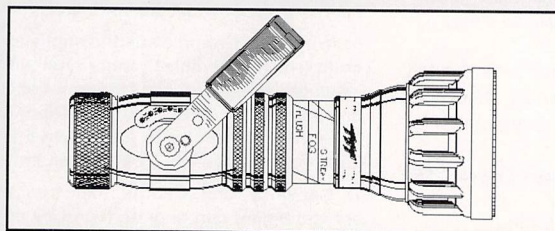
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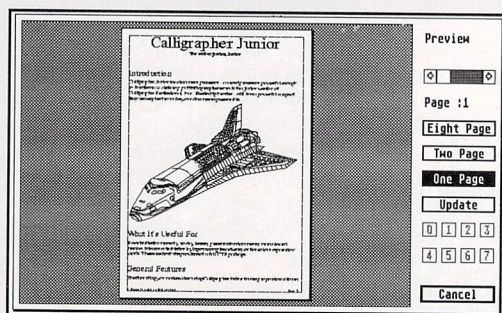
small print at 6pt using vector outline font

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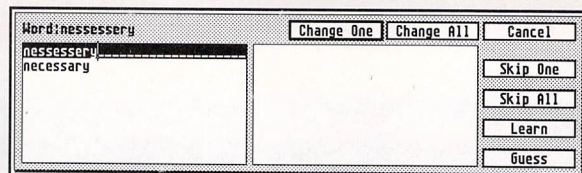


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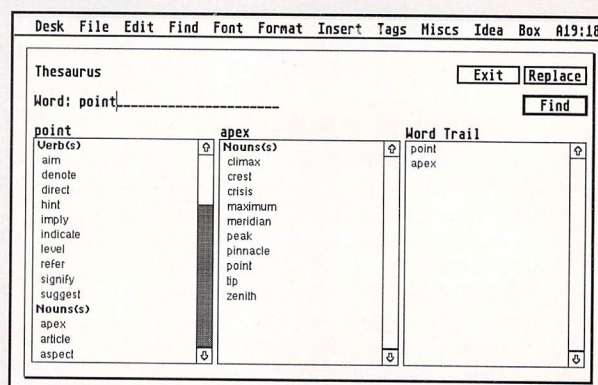
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- 11 Footnotes with identifying numbers. You can put almost anything in footnotes that can be included in normal text.

- 12 Calligrapher Junior can run on a 520 ST and is provided on single sided disks. 1Mb of memory is recommended.

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Public sector

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GAMES GAMES GAMES GAMES GAMES GAMES GAMES GAMES

LLAMATRON

Llamasoft (☎ 0734 814478)



So wicked, it's saintly. Strictly Shareware rather than PD – which means that if you keep it you should send Jeff Minter £5. Llamatron is like Robotron but with Llamas. This shoot-'em-up has everything: frantic gameplay, stonking graphics and the kind of addictiveness which only Mr Minter seems to be able to sprinkle into his games. There are corking samples, mad Mandlebrot monsters and besotted beasts. If you can buy a game of this quality for a fiver, it says buckets about many of the so-called "leading" software houses. Someone give this man a lifetime contract to keep him in yaks. Divine.

STF Rating – 95%

BOXING CHAMP

MT Software

Although the graphics are a tad on the "naive" side, this is an enjoyable game. There are two sections on the way to becoming a champ: you must first train your boxer with some punch-bag duty, and then enter the fight proper. Here you see a side-on view of your boxer and your opponent. You must slug each other a bit until one of you falls down. Fail and it's back to the gym for a bit more Rocky-style inanimate object hitting.

STF Rating – 65%



■ Oh no, it's the attack of the green toupées in *Bumper Jack*! Bounce, headbutt and avoid – with the emphasis on the last word for this game

DITCH

Goodmans PDL – Disk GD1166

Ditch is an adventure game set in a college campus. Written with the TASS adventure creator, it's a fluid little game and fun to play. It's a shame the descriptions are the wrong side



■ Trigger-finger-blistering shoot-'em-up *Llamatron*. Doody in extremis! Don't just gawp at it, go play our complete Cover Disk version now – then show your appreciation by sending Jeff Minter a fiver

of sparse, though. The parser is moderately intelligent and can understand such sentences as "search all," for instance. Some graphics might have been nice.

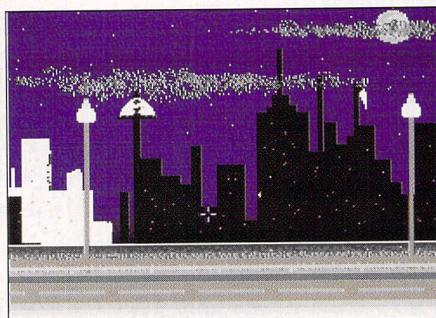
STF Rating – 62%

BUMPER JACK

TruST PD – Disk GAM64

STOS meets the Mario Brothers in this bash-your-head-on-the-platforms-'em-up. The idea of the game is to bounce little green sponges and then jump on them. If that doesn't sound too thrilling then you're not far wrong. While the programming is polished (for "polished" read "written in STOS"), the game's about as addictive as early morning Jobfinder repeats.

STF Rating – 57%



■ If all you want from a game is to improve your eye to hand coordination, then check out *Gunner*. Personally, I find counting the tiles in the local public lavatory far more enjoyable

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GUNNER

Trust PD – Disk GAM62

Remember when light guns first appeared and there were all those tedious "aim and blast" games with dreadful gameplay? You do? Well this is an "aim and blast" game, but without the light gun. Objects such as balloons, rabbits and fighter planes whizz across the screen and you have to click a cross-hair on them and then press the mouse button. Erm, that's it.

STF Rating – 46%

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MEGABLAST

Riverdene PDL

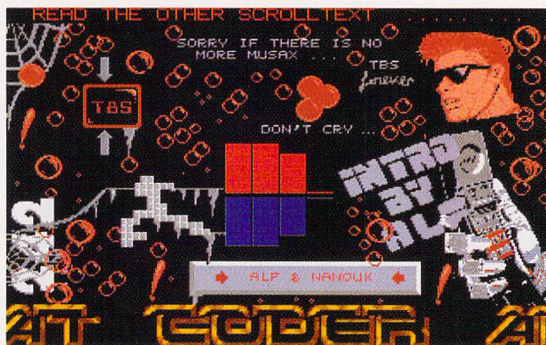


There's something of a trend occurring in the demo world. New coding groups are releasing high quality sampled music demos with little in the way of graphics. *Megablast* is a perfect example. The sample comes from the song by Bomb the Bass which accompanied the excellent shoot-'em-up *Xenon 2*. This is a very high quality sample which sounds excellent when amplified through the stereo – in fact it's almost CD quality. What's more, this is no 15 second splice – you get a good two-and-a-half minutes of Bomb the Bass. Speaker bruising.

STF Rating – 92%**AWAKENING OF THE GODS**

Riverdene PDL

Kruz definitely know what they like musically. *The Awakening of the Gods* demo consists of four screens with chip music and suitably (or should that be unsuitably?) satanic imagery. The one sample edit in the demo is very short but clean and well spliced. Graphics are smooth but uninspiring at times. Nothing special.

STF Rating – 70%

■ 3-2-1, Thunderbirds are go! What's more, *The French New Year Demo* gets the *ST FORMAT* vote for the worst reset demo ever

SLAY STE DEMO 1-4

MPH – Disk DEME10

The Slaytanic Cult boys return with this STE-only soundtracker demo. Judging from the scroll-text, the chaps are about to sit their A-levels and it shows – the disk looks half-finished. Gripes aside, there are four excellent tracker tunes here. The second tune is the best because it lets you monkey around with the bass, treble and balance of the sound. The Techtron demo which also appears on the disk shows off the STE's hardware scrolling to great effect. This is good enough to make any STE owner proud of what his machine can do.

STF Rating – 85%**THE FRENCH NEW YEAR DEMO**

Riverdene PDL

Don't know what it is about French coding groups, but they must have the collective IQ of a comatose hamster – they insist on swearing constantly in the scroll-text. *The Thunderbirds* is a case in point. Come on, lighten up, guys! In any case, there's little to commend in this demo. Best spots are the two soundtracker songs. The graphic screens are pretty poor and the whole thing has one of the worst reset demos ever.

STF Rating – 66%**SHAMEN**

Riverdene PDL



The sampled song demo glut continues with this choice cut from *Shamen*. The Sirius Cybernetics Corp (two blokes from Canvey Island) have done an excellent job with the *Shamen's Progen* song. In order to get the sample sounding better than a weedy transistor radio placed under a bridge, the boys sampled at 44KHz, compacted it down to 22KHz and then again to 11KHz. As a result, the bass sounds like bass and the vocals are clear enough to sing along to. Exhilarating.

STF Rating – 92%**WEST LONDON PD**

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- BP1 - CSR. Electronic Bank Statement personal accounts.
- A94 - Data handler v1.0 database. Context text editor.
- A96 - DSD. Sheet v2.0. Powerful lotus 123 spreadsheet.
- A108 - DSD. 1MB. B/Stat. sophisticated graph, stats analysis.
- A121 - Pools - Expert Results Predictor v2.5.
- W2 - STWriter Elite v3.6 the only PD word processor.
- W5 - Micro-emacs v3.925 text editor.

Exclusive to Public Dominator! Special Value Packs!

Each pack is supplied on 3 double sided disks for only £7.50!
All software is fully working.

•Home Business Pack•

Two databases Datahandler and First Base, STSheet and Sheet 2 excellent spreadsheets that include graphics and Lotus 123 compatibility, STWriter Elite the excellent word processor and Double Sentry the accounts package. All fully working and fully featured. Order code: MP7.

•Education Pack 1•

Many excellent programs full of colour and music for under 8's covering the following subjects: Shapes, Puzzles, Songs, Create Stories, Drawing, ABC, Mr Potato face, KidDTP, Graphs, Grids, Music, Notes, Piano and Spelling. A colour screen is required. Order code: MP16.

•Education Pack 2•

Many excellent programs for over 8's covering the following subjects: Understanding Algebra, Understanding Geometry, Understanding Ratio, Understanding Trigonometry, ShipVreck a adventure scenario for teaching maths at all levels, World a quiz about most countries and their capitals all over the world, Chemical Structure interpreter, Elements, Periodic Table, Maths Test, Numerical Go Round, Number Maze. Also included are Quizz and Study 2 study aids. A colour screen is required. Order code: MP17.

•Starter Utility Pack•

This pack was compiled with the new ST user in mind, to enable you to get just about all the utilities you may ever need, plus a wordprocessor, 2 databases and a graphic package. The pack includes: NEOMaster the excellent graphic package, STWriter Elite the brilliant word processor, Firstbase and Datahandler the 2 databases plus the following utilities: ARC and ARCSHELL the brilliant file compressor, Private Eye the system info utility, IntaSect RAM disk, Printer Spooler, BIG colour emulator for monochrome monitor owners and Monochrome emulator for colour screen users, Virus Killer 2, picture converters, extended formatters to get more space on your floppy disks, time and date setters, clocks, RAM free, autoGEM for STFM owners who want to autoload GEM applications and loads of other utilities. Colour screen required. Order code: MP1.

•Graphics Pack 1•

ANI ST the excellent animation package, fully working allows you to create your own animations!, Pearle the ray tracing package with full examples, MiniPaint the excellent fully featured painting package, NEOchrome the excellent painting program, and picture converters. Colour screen required. Order code: MP4.

•Graphics Pack 2•

Master Painter the excellent fully featured paint package that includes multiply screens, ColourBurst II the 800/3200 shades on screen at once paint package, Fine Line the drawing program, Fractal Zoom the most comprehensive fractal generator on the ST, the Atari Image Processor (1MB), MegaBlit the paint package, Studio and VanGogo2 excellent paint packages.
Colour screen required. Order code: MP5.

- MP21 - DSD. MMR. TeX the document processor and typesetting system. A 8 disk pack for £20.00
- A125 - DSD. 1MB. Opus v2.10 powerful spreadsheet.
- A138 - Double Sentry v0.00 small business accounts.
- A165 - Network a simple network system.

FONTS

- The following font packs are exclusive to Public Dominator.
- MP8 - GDOS GEM Font Pack contains 171 fonts, the GEM Font Master font editor and a PD version of GDOS special pack price of £7.50!
 - The following Calamus font packs each contain 3 disks.
 - MP9 - Calamus Font Pack 1 contains 40 fonts only £7.50!
 - MP10 - Calamus Font Pack 2 contains 32 fonts only £7.50!
 - MP15 - Calamus Font Pack 3 contains 34 fonts only £7.50!
 - MP12 - Signum Font Pack 1 contains 73 x 24 pin printer fonts. This is a special 3 disk pack for £7.50! DSD.
 - MP13 - Signum Font Pack 2 contains 68 x 24 pin printer fonts. This is a special 3 disk pack for £7.50!
 - MP14 - Publishing Partner Font Pack contains 19 fonts for use with Publishing Partner. A special 3 disk pack for £7.50!
 - A25 - MMR. Font Master excellent document processor.
 - A60 - Fonts for Font Master on A25.
 - A45 - Star ML10/LC10 font designer v1.1.
 - A63 & A64 - FontKit v3.31 an Epson, ST screen and Degas font editor.

EDUCATION

- BP17 - CSR. SPLASH is an art package for young users. Age 3 to 10. Being icon-driven, it is extremely easy to use and conducive to artistic creativity. All usual functions such as draw, line, fill, palette, disk, cycle, etc.. are available. Ideal as an introduction to computer art.
- BP18 - CSR. DSD. FUN TIME 1 and 2. Age 3 to 6. This disk is crammed with delightful tuition on many subjects: shapes, clock, pictures, money, seasons and more.
- BP10 - CSR. Classroom Maths for students age 7 to 12.
- A188 - CSR. NOTSTE. Chemistry for all V2.0.
- A178 - CSR. NOTSTE. Can you spell.

UTILITY DISKS

- A15 - STSWitcher will split an ST's memory into 2 separate parts allowing you to use 2 programmes at once. Autocopy - copies files into RAMdisk.
- A31 - 1ST Word printer driver files.
- A40 - Hard Disk 1: Directory counter, GEMsoft a 40 folder fix, HardAuto, SBackup, Turtle backup v3.01 and UnTurtle restore v1.1.
- A52 - Hard Disk 2: Folderxxx a 40 folder fix, an excellent directory lister, hard disk install, hard disk autoboot and other hd utilities.
- A172 - Hard Disk 3: The Vault excellent hard disk backup program.
- A41 - Monochrome Emulator v5. CMFonts converts MAC fonts to ST GDOS format.
- A59 - Spell v2.3 spelling checker, Magic Shadow archiver - store, backup and create other disk formats including Atari ST, MSDOS and CPM.
- A88 - DCFormat v3.03 THE ST disk formatter features extended formatting, MSDOS boot sector, and much more, Meg a Minute Elite v2.1. 1MB a minute HD backup, Megamatic v1.195 - boot utility.
- A90 - Superboot v6.0 THE ST boot program allows specified picture, auto run programs and lots more. Screendump24 v2.0 Alt/Help screen dump to Epson LQ800 or compatible.
- A91 - File Selector v6.0 replacement GEM file selector. Virus Killer v2.01. Filespy v1.0 file display.
- A97 - MMR. Sticker III. THE disk label program.
- STW 41 - FSelect v3/1989 by Martin Patzell the excellent alternative file selector. IConc allows you to design icons and assign them to a file, so that each file can have its own icon picture. Acache will speed up file access.
- A109 - Quick Disk. Quickfind v1.5, Quickindex v1.5, QuickST v1.2, Quickview v1.3, Quickinf v1.3, Quicklabel v1.1, Quickprint.
- A111 - Headstart v1.1 GEM auto booter.
- A120 - Copiers: copy beef, super copy, copy v2, copy track, disk copy, trnibler and others. accent.
- A128 - Recover. Bootinfo allows you to put any text on screen at boot up. FSCK v1.1 the file system checker and repairer. Dvorak keyboard changer. GEMlabel v3.0, RateHD a hard disk performance checker. Undelete will undelete file that have been deleted.
- A134 - BootDriveSelect allows you to select a drive to boot from when you reset your ST. The Formattor v1.21, Graf Tool, Chart

maker, BootB a drive B booter. GOACC allows you to select desktop accessories.

- A136 - The British Telecom Inland Call Calculator v1.02.
- A157 - Custom Formattor, Boot Sector Storage.
- A158 - CSR. The Complete Amateur Astronomy Guide.
- A163 - DSD. Gemini desktop replacement. Excellent all English version of a replacement desktop similar to NEOdesk. Includes the PD version of GDOS.
- A167 - BIG Colour Emulator very good colour emulator for monochrome screens.
- A168 - ARCGSH v2.1 a really good shell for any program.
- BP8 - CSR. Music Cassette Label Printer.
- A173 - ARC v6.02, ARC shell v1.98, LHarc v0.5b and v1.13, Turboarc, ARCit auto arcs and unarcs entire disks. Also unarc, unarcit and unzip.
- A174 - Dcopy v3.12. Bigscreen allows you to use GEM windows larger than the actual screen. Deckey how to plug in a dec keyboard. Filespy v1.2 file browser.
- A180 - MMR. DSD. Electrics disk contains lots of programs written in fast basic for students doing the BSC electronics course at Keele University.
- A181 - Interprint2 the ultimate printer controller. Printplus v1.1 prints 1ST Word documents.
- A182 - Expander expands a single sided disk to a double sided. MedRES STE a fix to the medium res bug on STes. Turbo ST speeds up your ST.
- A186 - DocDisp the best document displayer on the ST includes the feature to load picture file and a non case sensitive search facility FCopy 3.
- A190 - Datastore v1.0 an excellent database. Toxic Formatter v2.0. Batch the CLI.
- A191 - Video Manager v4.0 allows you to catalogue your videos.

GAMES

ALL games require a colour screen. We have got hundreds of excellent games disks which are detailed fully on our diskcat only £100!

- G85 - Skate tribe. A very good skate board game.
- G86 - DSD. Tennis excellent full graphics tennis game, also on disk are card games: patience and poker.
- G93 - Jitterbug you move around a large area picking up things and killing things.
- G95 - Chance a good shoot 'em up.
- G96 - Mutant platform game.
- G97 - DSD. 1MB. The Star Trek game.
- G98 - Tracker shoot 'em up.
- G99 - Haunted Monastery platform game.
- G100 - Escape from the Tomb of RA platform game.
- G101 - Overlander good shoot 'em up.
- G102 - Key to Atlantis good shoot 'em up
- G103 - DSD. Pop Eyed a 60's music trivia strip quiz.
- G104 - Nova an excellent galaxians type shoot 'em up.
- G105 - Tile Games v2.0.
- G106 - The Name Game.
- G107 - Patience an excellent card playing game includes golf, little spider, calculation, siege, raglans and elevens.
- G108 - First Serve a tennis game.
- G109 - Stumped the cricket game.
- G110 - Yahzee the dice game.
- G111 - Stocks and Bonds a stock market simulation.
- G112 - Upstart a shoot the cherries up arcade game. excellent!
- G113 - Spaceballer an platform excellent game.
- G114 - The Rush is an excellent platform game.
- G115 - Bumper Jacky a great platform game.
- G116 - Zoltar a massive shoot 'em up.
- G117 - Flight Simulator.
- G118 - England Team Manager football game.
- G119 - NOTSTE. Bunny hunt.
- G120 - DSD. League Soccer football game.
- G121 - Top of the Pops record company simulation.
- G122 - NOTSTE. Heads and Hammers.
- G123 - Fuzzball and Bounce out 2 platform games.
- G124 - Motor cycle a good arcade type motorcycle game.
- G129 - Snakes and Ladders the game.
- G131 - 1MB. Anagrams, you enter a word and it will show all the possible anagrams.
- G132 - DSD. Ditch Day Drifter a text adventure.
- G133 - MMR. Risky Construction Set v1.5. you create a fictious 'world' and have wars etc.

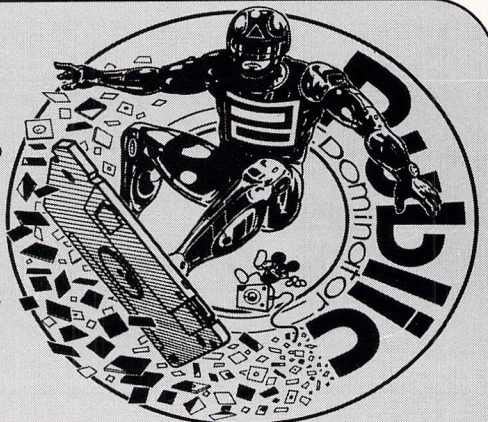
BUDGIE GAMES

These games are licensware, for each one sold Public Dominator gives 50p to the author and there is no more to pay. All these

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The Seal of Reliability

-Public Domain, Licenseware, Shareware

games work on all ST/STEs and require a colour screen.

- B1 - Darnoid a good space game.
- B2 - Football 88 league simulation.
- B3 - Blitz III action shoot 'em up.
- B4 - Othello reversi board game.
- B5 - Pro Darts 501 down.
- B6 - DR Boris defuse the TNT bombs before they destroy you!
- B7 - Ball Zone the breakout game.
- B10 - Moneyspinner the slot machine.
- B11 - Maelstrom vertical scroll shoot 'em up.
- B12 - Ace invaders a master implementation of Space Invaders.
- B13 - Zenith arcade space battle.
- B14 - Goldrush multi level platform game.
- B16 - Word puzzle generator.
- B17 - Make a break trivia quizz where you play snooker by answering the questions.
- B18 - Parabeilum brilliant platform game.
- B19 - Tri Heli a mega must have fast game.
- B22 - Bandit the one armed bandit.
- B23 - Space Blob excellent platform game.
- B24 - Slippery Sid great maze game.
- B27 - Psicotik if it moves shoot it! Mega space game.
- B30 - A quest for galaxia a master implementation of Galaxians.
- B34 - Safe as houses Monopoly game.
- B35 - Hostile reception Xenon type shoot 'em up.
- B40 - Dizzy Lizzy across between Pacman and boulderdash.
- B41 - Exodus superb graphics arcade game.
- B48 - XWPuzzle.
- B50 - Space Invaders and Detonator.
- B52 - 1MB. Douglas Rockmoor the greatest ever impleation of Boulderdash ever! Brilliant!
- B53 - MMR. From Little Arcorns.
- B56 - Super League Soccer.
- B57 - CSR. FOOTBALL GENIUS Four hundred questions on the world's greatest sport.
- B58 - CSR. BERT the SQUIRT An 80-level game solely designed to help Bert get fatter.
- B59 - CSR. G-ORB explore inhospitable galactic cells. Use your FDM space mallet to activate cosmic levers. 80 levels
- B60 - CSR. GUIDED MISSILE A two-player game in which each player guides his missile towards enemy sites.
- B61 - CSR. A WINTER'S TALE This is Dizzy Lizzy II with the same addictive gameplay and 40 more levels. Set in a serene Christmas atmosphere.
- B62 - CSR. COLONY An excellent scrolling "missile command" variant with a multitude of special effects.
- B63 - CSR. SPACED WELLER Your aim is to create coloured lines upon a magical grid. Points are awarded for every such lines. Spheres of different colours have different effects. Beware of chain reactions.
- B64 - CSR. CASTLE FRANKENSTEIN As the title implies, your ultimate goal is to create a Monster out of a pile of bones that has gone missing. The bones are scattered throughout the first 19 levels of the game, and all you have to do is get them to level 20, where you pull the odd lever and stick them together.
- B65 - CSR. DOUGLAS II - 1/2Mb version of B52.
- B66 - CSR. MISSILE ALERT! Destroy each and every wave of incoming missiles and planes.
- B67 - CSR. PACO A Boulder Dash type game where you have to dig to find the diamonds etc.
- B68 - CSR. Black Scar Mountain A good adventure that includes graphics.
- B69 - CSR. Tablit II An excellent word game where each player has a set amount of letters with each letter being worth a certain amount of points, and you have to create words end to end.

GRAPHICS

- GR1 - CSR. NEOchrome Master v2.1 excellent graphic package.
- GR6 - Degas disk - 155 fills, 10 brushes, 7 fonts, printer driver files.
- GR7 - DSD. 1MB. AIM v2.31 of the Atari Image processor gem based.
- GR14 - MMR. Public Painter v0.1.
- GR15 - DSD. 1MB. MMR. JIL2D CAD drafting program.
- GR17 - Picture Convertors. Print Master/ Degas converter, NEO/ Degas/Tiny/IFF /Spec512 to NEO/Degas/IFF converter. IMG/AIM converter IMG/AIM to postscript, Mac GIF stripper, Spectrum 512 spc/spu to GIF converter and Spectrum 512 spc, sps and spu slide show.
- GR18 - MMR. Eplan an electrical circuit cad program.
- GR19 - DSD. Fractal Zoom v3.1 the most comprehensive fractal generation program available.
- GR20 - .IMG utilities. 1. convert2img v0.9 converts any degas

format, tiny, neochrome, macpaint, spectrum compressed and uncompressed to a monochrome .img format. 2. img quick view .img file viewer. 3. the .img slide show v1.1.

- GR21 - ANI ST the fully featured animation package.
- GR24 - CSR. Pearle the 3-D ray tracing package.

PROGRAMMING LANGUAGES

- L1 - 68000 Assembler, Xlisp, STLogo, Tiny basic.
- L2 - STBasic.
- L3 - Advsys adventure writer language.
- L4 - Forth83 programming language.
- L5 - PDC v2.0 compiler.
- L6 - Toy Prolog.
- L7 - Xlisp v1.7.
- L8 - Forth from bradley firmware.
- L9 - ST Icon v6.3, based on Snobol4.
- L10 - Little Smalltalk.
- L12 - C make. This is so like the unix make that you should read the unix documentation.
- L13 and •L14 Modula-2 development system v1.0.
- L15 - DSD. Sozobon c compiler.
- L17 - DSD. AGT v1.19 the adventure writer.

MUSIC

- M9 - MMR. Music Writer lets you create music on screen with notes. No print option.
- M15 - The Accompanist V2.3 MIDI 16 voice sequencer by Henry Cosh.
- M18 - DSD. Soundtracker player and Soundtracker modules converted from the Amiga.
- M19 - DSD. Soundtracker player and Soundtracker modules converted from the Amiga.
- M20 - DSD. Soundtracker player and Soundtracker modules converted from the Amiga. also documentation and some source code in 68000 and gfa basic on soundtracker formats and different frequencies.
- M21 - DSD. Noizetracker.
- M22 - DSD. Quartet samples disk 1.
- M23 - DSD. Quartet samples disk 2.

WORDPROCESSING UTILITIES

- W1 - CSR. Type It! The brilliant touch type tutor.
- W4 - Proff v1.0 very powerful text formatter.
- W9 - Newsletter maker - allows you to make a GEM disk magazine.
- W11 - Postscript disk. PS prints 1ST Word document in postscript format. iSTW2PS as above but including 1st Word plus graphics very flexible. Snapshot - outputs hires screen to PS printer, choice of size, angle etc. and examples of Postscript source code and utilities to control printer.

DEMOS

- All demos require a colour screen.
- D122 - DSD. CSR. NOTSTE. The Union demo!
 - D123 - DSD. CSR. 1MB. The Amazing Snowman demo.
 - D125 - DSD. CSR. NOTSTE. The Carebears Cuddly demos.
 - D128 - DSD. CSR. The Wattaheck demo.
 - D129 - DSD. CSR. The Swedish demo including sync and the carebears.
 - BD1 - CSR. DSD. Mind Bomb the latest mega mega must have demo.
 - D149 & •D150 - CSR. DSD. 1MB. NOTSTE. Delerious Demo from the Alliance
 - D158, •D159 & •D160 - CSR. DSD. NOTSTE. Batman the Movie Demo. Excellent 3 disk full colour digitised demo of the film.
 - D221 & •D222 - CSR. DSD. NOTSTE. 1MB. Dragons Lair demo by IRS animated scenes from the game.
 - D243 - CSR. Trans Beauce Party demo.
 - D244 - CSR. DSD. Phalanx Overdrive demo.
 - D162 - CSR. DSD. The lord of the disks 'Dragons lair' demo. excellent!
 - D176 - CSR. DSD. The Care Bears 'So what demo', excellent!
 - D191 - CSR. DSD. 'Mini Run'.
 - D197 - CSR. DSD. Space Ace amazing graphic animation.
 - D202 - DSD. CSR. NOTSTE. Predator demo by The Islander.
 - D207 - CSR. Snowman demo the 1/2MB RAM version. Excellent!
 - D210 - CSR. 1MB. DSD. The Star Wars Walker I demo excellent.
 - D213 - CSR. 1MB. DSD. The Star Wars Walker II demo.
 - D236 - DSD. CSR. Inner Circle Decade demo.
 - D240 - DSD. CSR. Star Trek The Enterprises leaves dry dock demo, also 2 excellent animations of the Reliant flying in space.
 - D247 - CSR. The Lost Boys Life's a Bitch demo.
 - D249 - CSR. DSD. Animations: the juggling clown, lock on fighter,

marilyn monroe talking, micrmag, sunglasses and trucking.

- D250 - CSR. DSD. 1MB. Animations: the barbers shop, walking foreman, channel 4 logo and unicycle.

STE DEMOS

These demos will only work on an Atari STE

- D144 - CSR. The Official Atari France demo!
- D214 - CSR. Sound OFF.
- D228 - CSR. 1MB. AN COOL from The Care Bears demo.
- D229 - CSR. 1MB. The Jungle demo!
- D230 - CSR. Movie shows off the stereo sound+the blitter chip.
- D231 - CSR. 1MB. BOING a bouncing ball with colours scrolling through it and the sounds of Axel-F
- D232 - CSR. 1MB. Fantasia! Sounds of the Cure and excellent graphics. Press HELP for instructions. Note: this STE demo does not work on STEs with TOS v1.62!
- D233 - CSR. 1MB. 3D Scroller. sounds of The Cure and excellent graphics!
- D234 - CSR. 1MB. Psychedelic House II By The Overlander.
- D251 - The Black Cats STE demo excellent!
- D252 - The 2nd French STE demo brilliant!

NEW DISKS

We add dozens of disks every month to our catalogue, if you have some Public Domain or Shareware that we do not, then send it in! We will swap any 2 of our disks for each 1 of yours. Please check that we do not already have the software before sending it in.

Your Second Manual to the Atari ST

Having got your computer and read the manual that came with it, you are probably still completely in the dark about the ins and outs of using the ST. The book Your Second Manual goes in depth in an easy to understand way about every aspect of using your ST - what is a RAM disk? A BBS? How do I format a disk and auto load my favorite program? It explains what a computer is, about the ST keyboard, mouse, disks and disk drives, the screen, and about games, graphics, word processing, DTP, User Groups, GDOS and lots more. If you want to get more out of your Atari ST, this is the book for you!

Only £8.00

fully inclusive VAT, P&P. Order now! We will despatch today! 1ST Class!

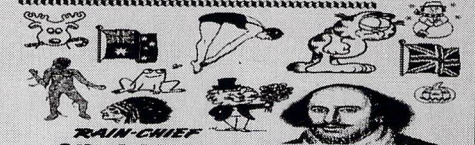
Clip Art

The following 4 packs of clip art are disks that are filled with black and white images that would be suitable with all graphic and desktop publishing packages. The images are complete and copyright free.

Clip It! Volume 1. £12.50!

Hundreds of clip art images on 5 disks all in Degas format suitable for all graphic and desktop publishing packages. Subjects covered: sports, flags, animals, cartoons, humorous, Xmas, Jewish, borders, Halloween, Valentines, horses, eyes, alphabets, hands, 1930's trademarks, zodiac, cars & more.

Here are some examples:



Clip It! Volume 2. £12.50!

Hundreds of clip art images on 5 disks all in IMG format suitable for most graphic and desktop publishing packages.

Subjects covered: men, women, illuminated

A to Z, arrows, stars, explosions, humorous, cartoons, pointing hands, food & lots more.

Here are some examples:



Clip It! Volume 3. £12.50!

Hundreds of clip art images on 5 disks all in IMG format suitable for most graphic and desktop publishing packages.

Subjects covered: Fruit, Herbs, Meat, Arrows, Special Occasions, Vegetables, Kitchen Utensils, Cups and Glasses, Art Deco and Breakfasts.

Here are some examples:



Clip It! Volume 4. £12.50!

Hundreds of clip art images on 5 disks all in IMG format suitable for most graphic and desktop publishing packages.

Subjects covered: More Art Deco, Babies, Boys and Girls, Lots of humorous, illuminated A to Z, Scrolls, More Special occasions and Calligraphic Ornaments.

Here are some examples:



To order, simply quote the disk code number.

Disk prices:

all disks are priced equally depending on how many you buy:

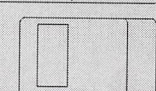
1 to 5 are £3.00 each,
6 to 10 are £2.75 each
11 or more are £2.50 each

All prices are fully inclusive.

Please send a cheque or postal order payable to Public Dominator ATARI
P O Box 801, Bishop's Stortford, Herts,
England, CM23 3TZ.

Foreign Orders: All foreign orders must add 10% (minimum £1.00). Non EEC countries & Spain, Greece, Portugal, Eire & Italy MUST also add £1.75 for registered post.

Our DiskCat has indepth details of all 800 disks only £1 or **FREE!** with any 5 disks!



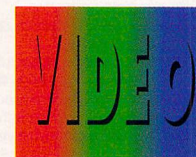
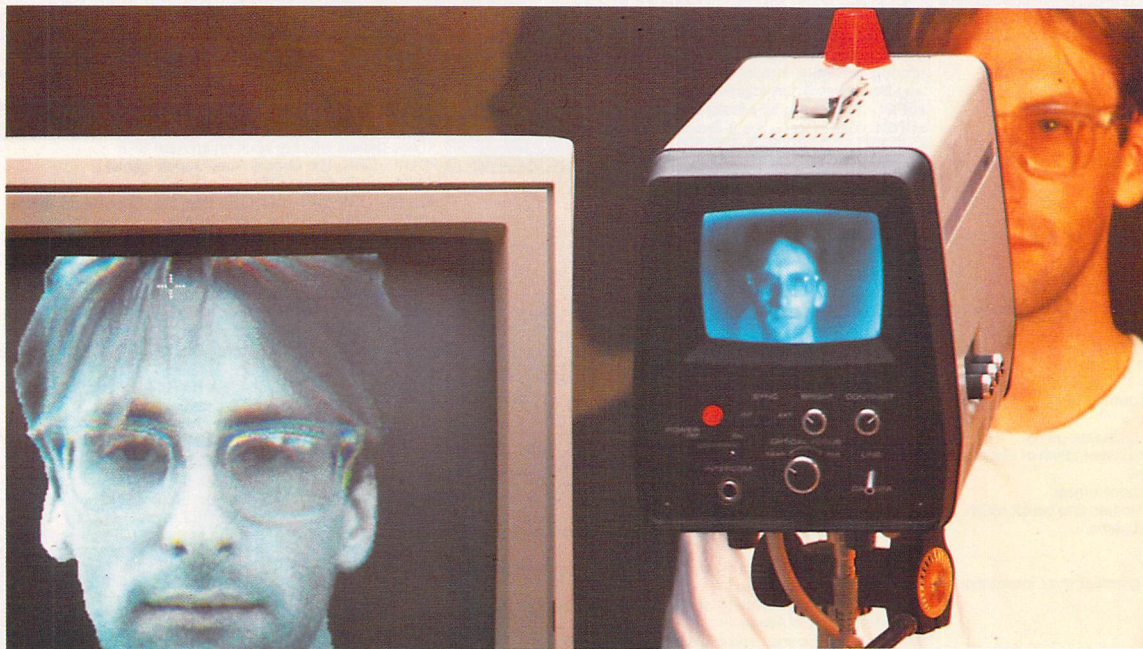
Send an A5 stamped SAE for a **FREE** copy of our printed catalogue. Shows concise details of the top 400 disks. Free with all orders.



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■ **Face the facts:** your ST can create incredibly detailed digitised images – and you don't have to spend a fortune to get the kind of results shown here

Put yourself in the picture

Digitisers give your ST the chance to view the world as never before. Dave Burns gives you a rundown of the latest digitising hardware

FULL-COLOUR DIGITISING ON YOUR ST



For colour digitising, you can either fiddle with coloured lenses fitted one after another to a camera, or use an automatic RGB splitter box. There are two currently available.

● **Vidi-RGB** is a hardware add-on that enables you to create colour pictures without using a camera. All you need is a video recorder with a perfect freeze-frame facility. This RGB splitter box automatically sorts out the required red, green and blue shots and then merges them together to produce a final colour image. The software has everything you're going to need.

There are plenty of options – operated via the mouse button or by keystrokes.

STF Rating – 82%

Vidi-RGB is available bundled with **Vidi-ST** and **Vidi-Chrome ST** (£179 for all three) or on its own for £79.99. Rombo Productions ☎ 0506 414631

● **Third Coast's RGB Splitter** works on the same principle but incorporates a dial to select the colour you wish to digitise – red, green or blue. It's hard obtaining the right colour shade.

STF Rating – 64%

£129.99 Third Coast Technologies ☎ 0257 472444



■ With a good digitiser package like **Vidi-ST** and almost any art program you can make your ST do wonders – lay your own text over a familiar digitised image, for instance, or modify the image itself. The only limit is your imagination (and taste)

Digitisers are small pieces of hardware that slot into your ST's cartridge port and enable you to take frames from TV or video images and save them as Degas or Neochrome pictures. Once a frame is safely on disk, you can edit it with your favourite art package or use it directly in your own desktop publishing setup or with a word processor like 1st Word Plus. Within a very short time you could have an extensive collection of artwork, tailored to your own individual requirements.

Most digitisers are mono – they can create only monochrome images – but with the addition of some extra hardware it is possible to produce colour digitised images. Once you've invested in a digitiser, all you need is a bit of creative imagination and you can create a series of pictures to use in your own animations, liven up your videos (see this issue's special feature, beginning on page 30), or even try your hand at writing a demo. The creative possibilities are endless.

The Realtizer is one of the more expensive digitisers available, but it comes with everything you need for colour digitising: three lenses for use with a camera, the digitiser itself, a lead and a manual. The manual itself isn't too clear – at this price you'd expect better quality – but it does cover the basics. To use the digitiser, how-

BYTEBACK



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Prices are inclusive, nothing to add!

BG. GAMES

- BG.01 Monopoly; The classic property trading game. Plus: Chess, Backgammon, American Football simulation...
- BG.02 Haunted House; Professional quality platform game. Plus: Daleks, Aggravation, Warzone, Connect 4... DGBD; Gauntlet style game. Plus: Stone De-Luxe, Breakanoid and Fruit Machine simulator.
- BG.14 Invasion Adventure; STAC produced text and graphics adventure. Plus: Sherlock Holmes; Superb Cluedo style detective game and Paranoia...
- BG.17 Spooks; Super Pac-Man version. Pipe panic; arcade favourite!
- BG.18 Megaroids; Asteroids version. Plus: Line Up 4, Hangman, Explode, Blaster, V-Kill; Virus Killer.
- BG.19 Cards; Cribbage, Poker squares, Solitaire, Klondike, Blackjack. Plus: Rubics Cube, Fun face...
- BG.20 Dungeon Master; Maps of levels showing doors, treasure etc. Plus 40+ pages of information, hints, tips... Give us a break; version of the Pub Snooker/Trivia game.
- BG.34 Assassin; Excellent Graphic adventure written with STAC.
- BG.43 Wizards Tower; Superb Text and graphics adventure written with STAC
- BG.44 Zoltar II; Super Shoot-Em-Up game with digitised sounds!
- BG.45 Orbit II; Superior Arkanoid copy, originally free with STOS, now compiled and with digitised sounds!
- BG.47 Vegas Gambler; Professional Casino style games: Roulette, Poker, Blackjack and Slot Machine!
- BG.55 Froggy; Good version of the old classic road crossing game. Plus: Caves of Rigel; Maze type arcade game.
- BG.56 Cribbage, Checkers, Joust, Target, Yahtzee...
- BG.57 Dungeon Master - NEW Dungeon, created using Dungeon master editor! Original Dungeon Master game required!
- BG.58 Soko; Original addictive 50 level puzzle game. ST Format ****
- BG.59 Bubble Trouble; Addictive and smooth Pacman variation with sampled sound. Jumpster; Q-Bert style game.
- BG.62 Millipede; very good version of the old arcade classic.
- BG.64 STumped; STOS produced tactical Cricket game. STOS not needed to run!
- BG.65 Joust; Arcade game version. Space War; Space strategy game.
- MG.01 BOLO; Arkanoid style game, but different, paddle can move all over screen, works in colour and mono!
- MG.04 Bumper Jack; STOS produced Platform game. Plus Yatzy; Dice game.
- MG.05 Mars Maze; another excellent STOS produced platform game.
- MG.08 Star Trek - Next Generation; Encounter at Arcturus: Battle the Ferengi in this strategy game with digitised sound samples. (NOT STE)

BU. UTILITIES

- BU.01 Neochrome; Professional quality drawing program plus slideshow. Communications; Kermit etc. Use bulletin boards, transfer files.
- BU.05 STWriter Elite; High quality Word Processor. Fully documented!
- BU.29 Label printing accessories; Address, disk and cassette labels.
- BU.34 B-Boot; Enables booting from drive B, address book, database etc
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- BU.54 Amateur Radio utilities; Morse tutor, Graphline calculator etc.
- BU.56 Your second manual to the Atari ST, invaluable reference book...
- BU.57 ANI-ST (formerly Aegis Animator costing £79.90!) + GFA Raytrace demo!
- BU.58 FSelect; alternative file selector. Desk Manager; Choose Auto programs & accessories etc...
- BU.59 ZX81 Emulator; including 38 program files! Uses the original keyword entry system. Brilliant!
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- BU.61 ZX81 Programs; 100 + files to use with ZX81 emulator (BU.59), 3D Defender, Pacman, Chess, 3D Monster Maze... Computing History! Fractal Landscape Explorer, Mandelbrot Show, Spirograph...
- BU.67 Cardfile; Simple Name and Address database with search facility VDU v2.4; Virus Detection Utility...
- BU.68 Magniwriter; ST Writer version with larger text! Ideal for use on TV for children or poor eyesight!
- BU.72 STE Boot disk; Enables STE to boot up in Medium resolution! etc...
- MU.05 Sheet v2.0; powerful spreadsheet with documentation and tutorial, Lotus compatible, 1280 rows x 280 columns!
- MU.07 Gemini; superb NeoDesk style desktop replacement! German origin.
- MU.10 BStat; sophisticated graphing and statistical analysis program.
- MU.12 Hard disk utilities; Invaluable aid to hard disk users...
- MU.13 F-Copy 3; Superb copier, will even backup some copy protected disks. Features: Fast Format, Virus Check, Scan Disk, Multiple Copy, Verify...

BE. EDUCATIONAL

- BE.01 Things to do with numbers; full working demo, Kid Publisher, Alphafit, Stage II; drawing program, Gilbert...
- BE.02 Kidprogs; Kids Graph, Kids Grid, Kids Music, Kids Piano, Kids Notes...
- BE.03 Kidprogs; Kid Potato, Kids ABC, Kid Sketch, Kid Story...
- BE.05 Colourbook; Fun for the younger child, an on screen colouring book!
- BE.07 Word Extract, word puzzle help Plus: Starchart; astronomy program.
- BE.08 Geography quiz; good educational game, plus Maths made easy...
- BE.09 Spelling made easy, educational program that talks to you!
- BE.10 Jigsaw; load any Degas picture as jigsaw puzzle! Great fun!
- BE.11 KShapes and KShapes Plus; great fun for younger children, build up pictures 'fuzzy felt' style!
- BE.12 Shipwreck; progress through this fun game by answering Arithmetic questions. guillotine Man; Hangman.
- BE.13 The Wolf and 7 kids; Superb multi-choice adventure game for the little ones. Race Cards; Give answers to addition sums to race cars. Great!
- BE.14 Noahs Ark; Unscrambling letters to form names of animals, includes animal noises, great educational fun!
- ME.02 EZGrade; Teachers student grading program, Molgraph demo; 3D molecular display and manipulation, Easel ST demo; loads desktop picture.
- ME.04 Search; Historical study program created with STAC from the same author as The History File.

BC. CLIP ART

- BC.01 Small symbols; Seasonal, Flags, School, Cars, Disney, Cute creatures, Sports and Recreation, Big Cats...
- BC.02 Titles, Headings, Christmas, Easter, Halloween, Valentine, Winter sports, Golf, Riding, Water sports...
- BC.03 Logos, Trade marks, Symbols, People, Racing cars, Fish, Food, Magazine Titles, Symbols...
- BC.04 Alphabets, Christmas symbols, Lots of eyes, happy, sad, wierd...
- BC.08 Pictures of Garfield, Beano and Dandy comic characters. Picswitch enables easy viewing & printing!
- BC.09 Viz Magazine; comic pictures, plus culinary; utensils, food...

.IMG Files

- MC.01 Boys and Girls; Pictures of small children at play (Clip Art)
- MC.04 Illuminated letters; Fancy A to Z. Plus; Funny pictures...

SO. MUSIC

- SO.01 Midi special; Steinberg switch. 32 track sequencer, Midi channel scope, Hi-Tech trivia...
- SO.02 Composer; enter notes from Midi keyboards or computer, Copy, transpose or output. Soundcomputer; allows the manipulation of internal sound chip.
- SO.03 16 Voice synthesiser; multi voice record, filter of controllers, variable resolution metronome, works on all ST's and monitors and comes with comprehensive manual on disk!
- SO.05 Alchimie Jr.; Powerful Midi Sequencer with features not found on many commercial programs. (Mono) (D/S)

DA. HELP!

- DA.01 66 Adventure game solutions! Including: Future Wars, Bards Tale, Indiana Jones, Hitchhikers Guide, Zork 1, 2 and 3, Fish, Pawn...
- DA.02 62 Adventure game solutions! Including: Leather Goddesses, Kult, Ultimas 1 to 5, Space Quest 1 to 3, Trinity, Deja Vu 1 and 2...

BD. DEMOS

- BD.26 Snowman; digitised animation and music. Half Mb version! (DS)
- BD.33 STE demo; See what your STE is capable of and be amazed! At last a demo as good as those Amiga ones...
- BD.38 ANI ST; 2 excellent animations produced with Ani ST (see: BU.57); Juggling Lamps and the Trash Can demo.
- BD.39 Teenage Mutant Hero Turtles; Excellent sample of the Turtles theme tune plus picture. Great one for kids!
- BD.40 Smooth Cyber Studio produced animation featuring a Space Station revolving on a starry background! Monarch; Impressive animation with excellent graphics and music.
- MD.15 Snowman; digitised animation and music. Brilliant! (Mb)
- MD.21 The Brilliant UNION multi demo colour monitor & joystick required!
- MD.22 UNION Demo 2; The Cuddly demo! lots of amazing animations accessed by moving an arcade style jetman around the screen!
- MD.23 Definitive demo by the Lost Boys, prepare to be amazed! (Mb)
- MD.28 Whataheck demo collection, by the Carebears again, Stunning!!
- MD.29 Like a Prayer; Digitised sample of the Madonna song! (Mb)
- MD.30 Cyber Demos; Buzzy Bee, Saturday Morning Workout, chasers - superb animated films from Cyber Studio.
- MD.32 STE Demos; 400 colour version of the Amiga classic BOING demo. Movie ST; Animation using Hardware scrolling & blitter routines!
- MD.35 Aliens; digitised sound and pictures from this Sci-Fi classic!
- MD.38 Probe; Animation of a Voyager style space probe slowly spinning in space then moving around a planet.
- MD.40 The Transylvania Demo; Music by Iron Maiden and coding by The Lost Boys makes this a very 'Heavy' demo.
- MD.41 Robocop; Digitised samples of some of the more memorable sections of the film plus digitised sound! Approximately 7 minutes long and comes on 2 packed disks! (NOT STE)
- MD.42 When Harry Met Sally; The very amusing bit from the film where Sally demonstrates to Harry how to fake....
- MD.43 Star Trek; Good sample of the opening sequence from the TV series plus a superb Enterprise animation...
- MD.46 Scanners; Disgusting exploding head sequence from the film! (Mb)
- MD.48 Jungle demo; Graphically superb amusing cartoon style animation with samples music and sound effects! (STE)

To order any of the above disks simply quote the required disk numbers. For a complete list of our PD software ask for a FREE catalogue!

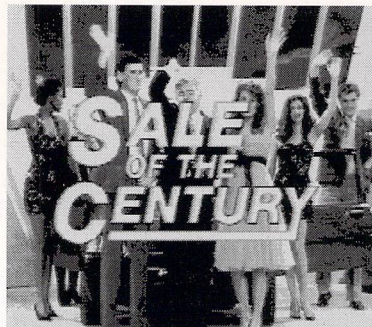
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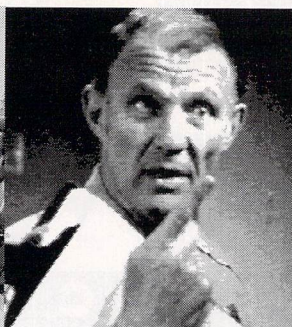
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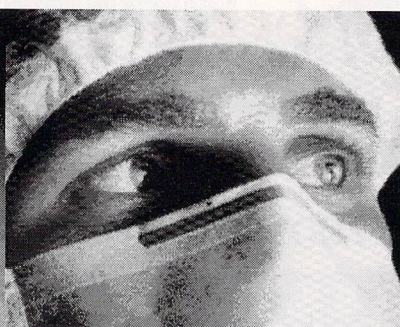




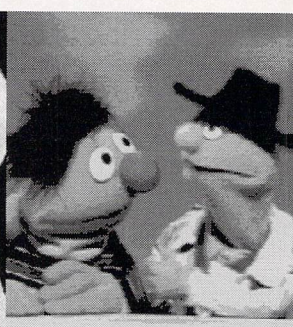
■ Long distance digitising with the Vidi-ST and a little help from Sky TV



■ Remember, let's be careful with our STs out there, guys



■ You can obtain colour images by using an add-on like the Vidi-RGB



■ Even Ernie can turn up on your ST... if you're not careful

ever, you do need to refer to it frequently, and you tend to obtain the best results only through a lot of trial and error.

The lead from your VCR connects to the top of the unit. Load up the software and you are presented with some drop-down menus that enable you to control the system. You can vary the rate of scanning from one fiftieth to half a second, depending on the shading you have selected. You can choose to display between two and 16 shades of grey.

After a while you can get satisfactory results with pre-recorded and home recorded tapes, but it does take some time fiddling around with the shading to get the image just right – and the more shades you use, the slower the scanning speed. On two grey shades the

“The Realtizer is one of the more expensive digitisers but it comes with everything you need for colour digitising”

monitor is a mere fraction of a second behind the TV screen. With 16 shades, the image takes time to build up on the monitor.

The supplied lenses are for use with a video camera. You shoot the image with each lens in turn, then use the software to mix the images to create a final image. (Be warned though: this procedure is not something to be undertaken if you are unfamiliar with the more serious side of your ST.) The final images can be saved in either Degas or Neochrome format in all resolutions, and you can then mess about with them using the supplied software or your favourite art package, so long as it can load these formats.

The Realtizer is a very impressive piece of hardware, but it is let down badly by the unhelp-

ful manual and you do need to spend some time familiarising yourself with it before you can begin to create images of reasonable standard.

STF: 76%

■ **The Realtizer £139.99 from Third Coast Technologies ☎ 0257 472444**

The **Sam Digitiser** is one of the largest digitisers around at the moment, and gives you a scanning speed of 25 frames per second. Although the results are very high quality, you're going to need a lot of patience to get the most out of it because, like the Realtizer, this isn't the most user-friendly digitiser around. Backup and support for the package are very good, though. Unfortunately, at the time of writing, the Sam is unavailable – but Advanced Concepts are willing to provide further information about the Sam Digitiser over the phone. If you have any queries about the hardware, just give them a ring.

STF: 79%

■ **Current price unavailable. Contact Advanced Concepts ☎ 0243 671149**



Vidi-ST is the best known of all ST digitisers and for good reason – this is the most user-friendly digitiser around. It can scan at 12 frames a second – great for animation effects. On

an ST with 1MByte or more you can store 25 frames and “grab” one frame at a time or a sequence – the advantage of the latter being that you can step through all the frames you've grabbed and select the best of the lot.

A lead for your VCR is included, but it is a little short. However, most electrical retailers can provide one at the length you require. The supplied software comes on one single-sided disk, including also a couple of example frames. The manual claims “you'll probably never need to read this manual again” – and it's true. The

software is driven by drop-down menus or single keystrokes and is very simple to use.

You can adjust the brightness and the contrast with controls on the digitiser, and alter the brightness via the software as well. The updated software (v1.29) gives you nine palettes, machine code so you can operate the Vidi-ST from within your own STOS program, a mono driver so you can digitise in high res, a Replay option to animate all the frames in store, and much more. There's a window option for cut and

“The Vidi-ST is definitely the most user-friendly digitiser currently available”

paste facilities. What's more, you can set a window and, while grabbing, update either inside or outside the window. You can even set a window for printing and print out just its contents.

You can save your images in Degas, Neo or GEM formats, either frame by frame or as a whole sequence of frames. You can even print the frames in memory or from disk with the printing software included. The quality of the printout is higher than you get when printing pictures using Timeworks DTP.

Vidi-ST, the mono frame grabber, comes bundled with Vidi-Chrome ST, which produces single frame colour pictures with a camera. You hold the supplied red, green and blue filters in turn in front of your camera lens and click with the left mouse button, then use the Merge option from the drop-down menus to unite them. You can then tidy the image up using the many options included and finally save the result.

STF: 96%

■ **Vidi-ST with Vidi-Chrome ST £119.95; with Vidi-RGB as well, £179 (see p 104) Rombo Productions ☎ 0506 414631**

THE FORMAT GUIDE TO THE BEST IN ST DIGITISERS

Digitiser Price	Sam £NA	Realtizer £139.99	Vidi-ST £99.99
Ease of use	70%	68%	85%
Output Quality	81%	79%	87%
Software	73%	69%	99%
Value For Money	52%	77%	95%
FORMAT Rating	79%	76%	96%

IS IT LEGAL?

Copyright rears its head again. All films and television programs are copyright, so any stills or frames you take from them are also copyright.

We all know it's okay to video record a TV program as long as it's for your own viewing, and the rules are probably the same when it comes to digitising. To be on the safe side, if you want to use your digitised pictures in a program you intend to sell or put into the Public Domain, always get written permission first.

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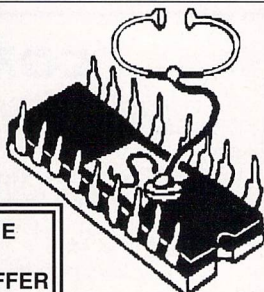
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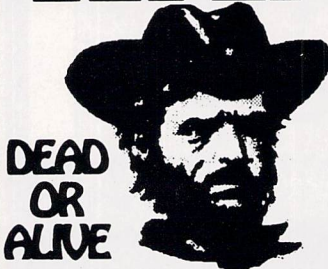
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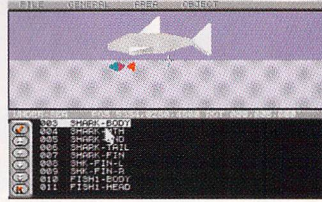




■ What would the 3D Construction Kit creators choose for their Desert Island Disks, we wonder? Probably anything by New Kids on the Block, The Colourbox or Phil Vetre



■ To test your game you can use one of two preset panels. They're only standard *Degas*, *Neo* or *IFF* screens though, so if you want you can create another and use that one instead



■ There's even an underwater world in the demo game. You can swim about in it and change the fishes. Mind you, this shark's a bit of an old square, so he might not let you do it



■ "Ground Control to Major Tom. We're about to blast off and I'd just like to remind you to put the filler cap back on the petrol tank this time. I dunno, these rookie pilots..."

3D Construction Kit

MACHINE: ALL COLOUR STs

PRICE: £49.99

FROM: DOMARK/INCENTIVE

CONTACT: 081 780 2222

Three-dimensional games have been around for donkey's years but they're very rarely programmed by casual ST owners. When was the last time you saw something as good as *F-19 Stealth Fighter* in the Public Domain? Well, all that could now change because Domark and Incentive have come up with an exciting program that enables you to create not only your own 3D worlds, but your own 3D games too.

The guts of the 3D Construction Kit system were created for use in Incentive's own 3D games, *Castle Master* and *Driller*. Now they've been refined and given a user-friendly interface and editing system. If you can think it, you can build it – it's as simple as that. You can just as easily build a racetrack, complete with cars and grandstands, as a football stadium, a house, a boat – even a world with all of them in.

Inside the large black box you find, along with the disks, a comprehensive yet readable manual and a demonstration VHS video tape. The video is a fantastic idea and really worth its weight in gold. Okay, so the acting may be a bit wooden, but who cares? The point of the video is to give you a clear, easy-to-grasp tutorial and get you started with 3D Construction Kit. It does this very well. Even your normally cynical reviewer found it difficult not to switch on his ST and jump straight in. Some day all manuals are going to be written this way.

Once you have finished watching the video, you're already well-versed in the principles of 3D Construction Kit. The concept of building your world, area by area, with connecting doors, is crystal clear. All you need to do is think of what you want in your world and then use the editing functions to go and build it. This can be a bit fiddly – but then again, so are many game-creating programs. At least with 3DCK you can see immediately the results of any action or alteration. Its real-time display enables you to look anywhere at the touch of a couple of buttons, and knocking up shapes is child's play



■ Knocking up a shotgun shack like this takes a matter of just a few minutes if you follow the 3DCK tutorial video. The shack is made up of a simple collection of flat rectangles, a cube and a pyramid

Virtual lego

What a load of old blocks! The tools to tame virtual reality are now with us. Neil Jackson takes a quick course in architecture and advanced interior design



when you can see them from all sides. But shape-building isn't the whole story. 3DCK can also help you create games.

As you'd expect, there are literally millions of different games you can design, depending on what you find challenging, interesting or amusing. It could be a simple "find the treasure" game in a weird world of your choosing, or a "kill the alien and then find the key to the giant spaceship" game, set in the middle of London after the shops are closed. It's up to you! The

important thing to realise is that 3DCK is merely a good tool (albeit a darn good one) – it can't make your game for you.

Fortunately, there is a demonstration world provided. This is remarkably similar to the demo *ST FORMAT* gave away on Cover Disk 23 (see page 138 to order a back issue), but there are more available exits in this version. In this world, you find a wealth of 3D bits and pieces, including several homicidal aliens and a huge Space Shuttle on a launch pad. There is a game element to it – you have to find the security pass to get close to the Shuttle – and as you'd expect, that's not an easy job. While it may not be the most involved game in the world, it certainly shows what's possible with the system and encourages you to push it to its limits.

The down side? Yes, there is always one, but thankfully it's not the end of the world. To make 3DCK understand what you want done with certain objects, you need to tell it. This is done via a programming language not everyone is going to enjoy. You can make objects in your 3D world without touching a line of program code, but making a game is a different story. Even so, there are only about 50 commands – and that's less than most BASIC packages. 3DCK's command structure is as easy as BASIC too, usually relying on things like IF... THEN statements to determine whether you walk into a door or fire a bullet. While this might alienate as many people as it attracts, it must be said that 3D Construction Kit is the closest you'll get to DIY Virtual Reality for the foreseeable future. Only a true square could ignore it! **stf**

FORMAT RATINGS	
3D CONSTRUCTION KIT/£49.99	
Domark & Incentive/081 780 2222	
Features	96%
A fantastic and versatile range of tools	
Speed	90%
Not as fast as some purpose-built 3D games, such as <i>F-19 Stealth Fighter</i> , but pretty close	
Ease of Use	93%
Simple, especially after watching the video	
Results	95%
There's no other way to create games this good, short of writing your own 3D system	
FORMAT VALUE	95%
Okay, considering the manual and video included	
The Competition	
STOS (£29.95, Mandarin ☎ 051 351 2961) is far harder to use and not as versatile; <i>Talespin</i> (£29.95, Microdeal ☎ 0726 68020) is a much more limited adventure creator	



■ Recreate whole landscapes and then wander around in them. This should be familiar – it's *Beachy Head*, the huge cliff near Dover. Okay, so it's a little blocky, but this is only virtual reality, after all



■ The test game that comes with 3DCK has several locations and a good deal of puzzles. You can find this strange character in a small kiosk through one of many doors. Don't shoot him – he fires back!

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File-o'-facts

Wondering what it's like to get your macros hotwired? Andy Hutchinson gets his hands dirty rooting around in sub-directories and reveals all

Codehead are an American company who specialise in productivity software for the ST. They have just appointed a UK distributor and are now releasing updated versions of their most popular utilities. Take a look at these up-to-date programs and see the kind of useful features they have to offer.

HOTWIRE

STFORMAT Finding the program you want to run among all those folders and drives is akin to finding a seat on the 5.30 tube from Chancery Lane – nigh on impossible. Codehead realise this and have developed a configurable hotkey program.

This nifty utility enables you to launch a program from Desktop at the press of a key. The program has its own menu page. To install a program you simply click on an empty slot and then show *Hotwire* where it can find it. There are 400 possible hotkey combinations, so you're unlikely to run out of choices.

Hotwire keeps track of how long you've spent using a particular program and reports back the information when you emerge from it. If you're worried about unauthorised use of your ST, then you can attach a password to any file. You can also move easily between the Desktop and *Hotwire* simply by hitting the right mouse button. If you forget the hotkey for a particular program, you can just zip into the file menu and double-click on that file.

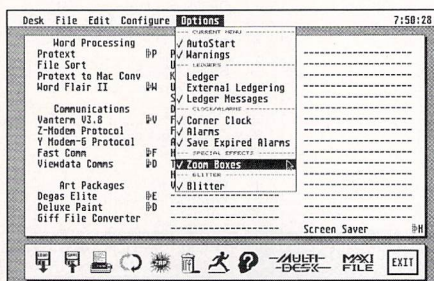
This program is useful for floppy disk users as well as hard drive owners. Instead of rooting around through hundreds of disks, you simply insert the one that *Hotwire* asks for and it runs the program for you automatically.

FORMAT RATINGS

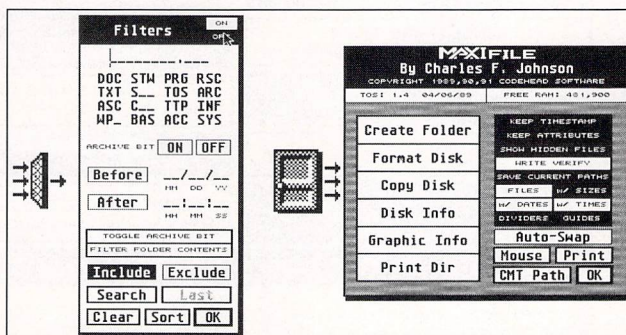
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System Solutions/0753 832212

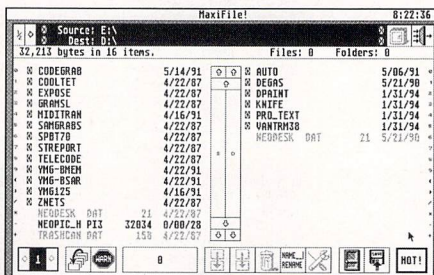
Features	85%
Speed	92%
Ease of Use	92%
Results	91%
FORMAT VALUE	90%



■ *Hotwire's* main menu enables you to view the hotkey shortcuts for your programs. You can also run the programs directly from this screen simply by double-clicking on the appropriate program



■ *Maxifile's* sub-menus offer you some very sophisticated search functions – you can search for a particular filename extension, for instance, or any wildcard you choose. The extras menu (signified by the door) includes the option to format disks to a very fast interleaved or true MS-DOS standard



■ *Maxifile's* dual drive display, showing both source and destination drives, makes copying and moving files around a cinch. You can scroll the two windows independently or swap them around by clicking on the arrow icon at the top left of the display. Of special note is the trashcan – it's recoverable

MAXIFILE 3

STFORMAT When you're trying to manipulate hundreds of files (something hard drive users tend to do frequently), then you're going to appreciate the new approach that Codehead have put into their file management software.

Maxifile 3 uses names rather than icons for files. You get a split screen display which shows a source and a destination directory. You can copy or move files simply by clicking on the appropriate filename and hitting the copy icon.

However, the program enables you to do a lot more than just simple copying. Dotted

around the screen are 12 icons: eight perform one simple function, while the remaining four access sub-menus. These sub-menus enable you to perform complex searches, create folders and format disks (to true MS-DOS standard if you desire). One of the most interesting features is the disk graphic info section. This shows you visually and textually exactly how much space you have available on the selected drive.

The program can be run either as a normal standalone program or as a Desk Accessory, so it's always available, even within other programs. Its capabilities outstrip other Desktop replacements by a long chalk, but it's likely to be of most use to hard drive owners. *stf*

FORMAT RATINGS

MAXIFILE 3/£29.95*

System Solutions/0753 832212

Features	92%
Speed	93%
Ease of Use	91%
Results	91%
FORMAT VALUE	92%

CODEKEYS

Codekeys is a macro tool – a program that enables you to record a sequence of key-strokes and mouse movements and then play them back from within programs. Macros are especially useful in productivity programs such as word processors or desktop publishing because they can save you a lot of time.

Just activate the macro and perform the function you want recorded. It can even store the timing of mouse movements. As a result,

you can have a macro which loads in your WP workfile, opens the dictionaries, configures the display and finally places the cursor at the right point in the text.

With *Codekeys*, each program you use can have its own set of macros and you can play these back at specific times – macros can even call on other macros. Previously such programs have suffered from incompatibility problems, but we tested *Codekeys* out on some very trying programs in the *ST FORMAT* offices and it didn't fall down once.

FORMAT RATINGS

CODEKEYS/£29.95*

System Solutions/0753 832212

Features	87%
Speed	91%
Ease of Use	88%
Results	89%
FORMAT VALUE	88%

* Please note: all the prices quoted rely entirely on the dollar-to-pound exchange rate. They're liable to go up or down depending on whether (a) George Bush's ticker is running at the correct Hertz rate, (b) at least 25 MacDonalds have opened up and (c) Dan Quayle's not gone and shot himself in the colon. Again.

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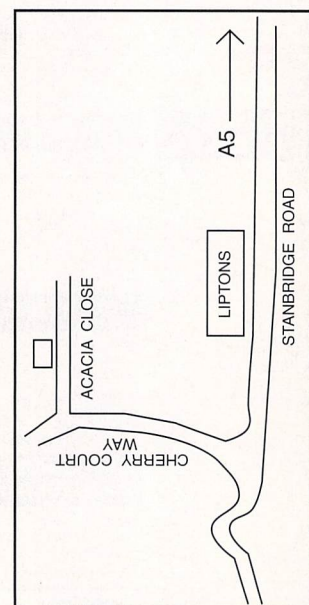
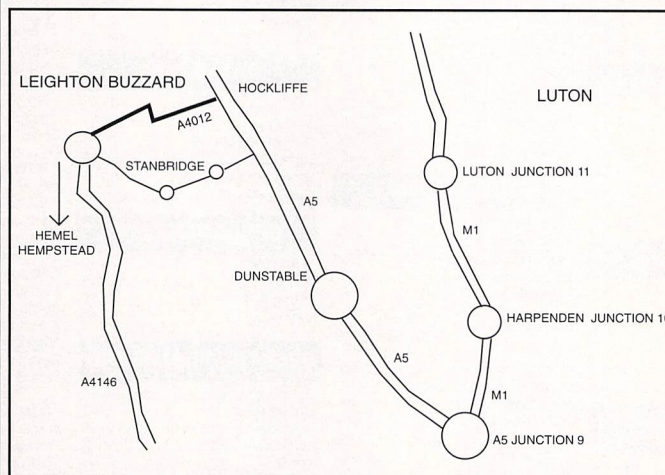
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SETTING UP FOR MIDI

Mark Prout from Twickenham has a 520 STFM which he uses through his TV set and a Yamaha PSS480 portable keyboard. He wants to know if he can connect them together and use a sequencer to compose tunes. He also wonders whether he can interface the keyboard to a sampling package to change the sounds the keyboard makes.

First, you can connect the Yamaha directly to the ST using two MIDI leads (your local Tandy shop can supply these for around £2.95 each). With the power off on both machines, connect the MIDI IN on the Yamaha to the MIDI OUT on the ST. Then connect the MIDI OUT on the Yamaha to the MIDI IN on the ST. You can then use a number of different sequencing packages on the ST to control the keyboard. *Accompanist*, the Henry Cosh sequencer, is a good starting point if you're new to the subject of MIDI and you don't want to spend too much money. (It was yours free on Cover Disk 16 – turn to page 138 if you missed it!) It also runs in the ST's colour modes, which is important if you're using a TV set. When you've decided to go the whole hog, *Trackman 2* is a brilliant sequencer, which also runs in medium resolution. (If you'd like to save yourself a massive £79 on *Trackman 2*, see Mail Order, page 126.) For full music notation, you are going to have to spend in excess of £300 for packages like *C-Lab*, *Notator* and *Notator Alpha*, which are high-resolution only.

On the sample front, sadly, there's bad news. The Yamaha PSS480 is not a sampling keyboard. Its preset voices are created using Yamaha's patent FM synthesis techniques – not samples. This means that all you can hope to do is trigger the sounds stored in the keyboard. You can change these a bit, but you can never get perfect sample-quality sounds. There is a Desk Accessory called *Midiman* (Hollis Research ☎ 0481 28286) which can be configured to enable you to control the Yamaha's control functions from your ST. This is about as close as you can get to altering sounds by remote control.

PERSONAL REORGANISER

Users of *Superbase Personal* – the relational database from Precision Software – might find these tips from G R Miles of Nuneaton useful. First, if you ever need to reorganise your database file, it's worth remembering that *Superbase* limits you to a maximum of eight characters for the filename. Because it appends your new name to the original name, this limit is easily exceeded. To prevent this, simply rename your original file something short, like A1, at the Desktop. Now you can go ahead and reorganise without worry.

Second, if you experience a *Superbase* 200 or 201 error while printing out in table mode, you need to reorganise your database file. If it still doesn't work when you've done this, you're going to have to create another file with no data in it and then transfer the data across from your original. It may be a pain in the proverbial, but if it's the only possible way of saving your massive database file, then it's worth it!

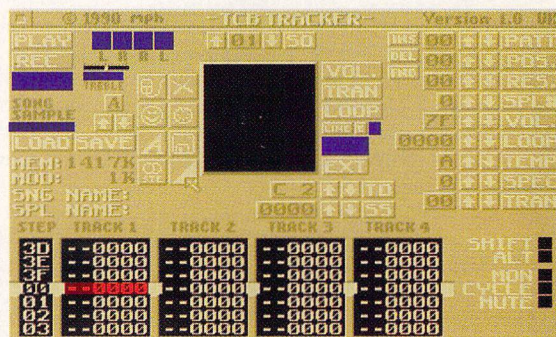
Desktop

This month, why not dig out a soldering iron and save yourself a few bob? Neil Jackson examines some easy-to-build add-ons which are worth their weight in gold



COMPACT CONVERSIONS

If you're a user of TCB Tracker, the excellent music and sample sequencing package by The Care Bears, you may find this little tippette from C S Davies useful. Tracker's documentation states that the converter program does not work on 520 STs, because of the lack of memory. However, if you copy the converter to a blank disk and stick it in an AUTO folder, you can use it on 520s with no problems. It works safely on files up to around 50K! Howzabout that then? So breath-takingly simple, it's spooky...



■ TCB Tracker – compatible with the 520ST? The manual says no, but ST FORMAT knows a simple way around the problem

AN ACCESSORY AFTER THE FACT

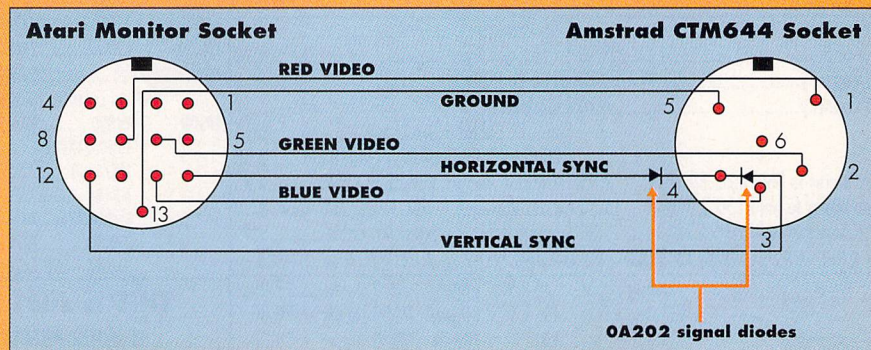
If you own a copy of the PD file-copier FAST-COPY 3, you can turn it into a Desk Accessory simply by changing the filename from FAST-COPY.PRГ to FASTCOPY.ACC. If the file is placed in the root directory (that is, not in any folders) it automatically loads up when you reset

your ST – though bear in mind that you can't have more than six ACCs loaded at one time. Now all you have to do to access the program is select it from the Desk menu. Thanks to Mark Smith from Liversedge, West Yorkshire for that helpful information.

CUTTING COSTS IN COLOUR

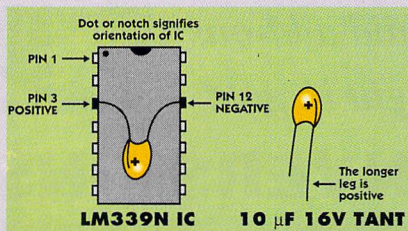
Like many of us, Neil Everatt from Lincoln is on the lookout for cheap ways to make better use of his ST. He's managed to obtain (for next to nothing, we hope) an old Amstrad CTM 644 colour monitor and is trying to connect it to his 520 ST. He's wired up the correct connections: Red Video to Red Video, Green to Green, Blue to Blue, Ground to Ground and V-sync to V-sync. However, it doesn't work too well. The vertical hold is a tad unstable, and the picture rolls at the slightest power surge. Even a disk access is enough to set it off. How can it be fixed?

The problem lies with the Amstrad's sync connection. This is not merely a vertical sync pulse – it's actually a composite horizontal and vertical sync, so the ST needs to send both these bits of information to make it work. Using a small OA202 diode (available from most electronics stores, for about 12p), connect both the ST's sync outputs to the Amstrad's sync connection. The diodes must be correctly orientated, with the white bar on the diodes nearest the Amstrad connection. For the full picture, see the diagram below.



TRAP THAT MOUSE

Does your mouse pointer jump and rush about the screen for no apparent reason? **Andrew Marsden** from **Retford** suffered from this, until he developed a solution. To give your mouse a steadfast, stay-where-it's-put feel, simply open up the mouse by removing the two screws underneath and solder "piggyback style" a 10µf (microfarad) 16 volt tantalum capacitor to legs 3 and 12 of the LM339N IC as found in most mice.



The positive lead to the capacitor is clearly marked with a + symbol and is usually the longer of the two. Attach this to pin 3; the other leg goes to pin 12. This is shown in the diagram above. The capacitor must be connected the correct way round and you must make sure that when you attach it you do not accidentally join any of the IC legs together with solder.

You can obtain the capacitors from Maplin Electronics (☎ 0702 554161, order code WW68Y, price 28p), although they are readily available from most TV repair shops.

MAKING MUSIC ON THE STE

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WINNER
STE PRIZE

Patrick Yates from **Lancashire** has been busy with his copy of **STOS BASIC** and has come up with a smart little routine for playing samples through the STE's DMA chip, thus enabling you to take advantage of the STE's stereo sound. The routine is a modification of the BASIC routine supplied in the *Mastersound* manual, but with a few enhancements to get the best out of the STE's improved design. Here's that routine in full...

```
erase 1
rem ** reserve space for sample in
rem ** bank one
reserve as data 1,N
rem ** n=length of sample
bload "state.sam",1
rem ** get start of sample
SAMPLE = start(1)
rem ** get address of DMA
DMA = $FF8901
rem ** get length of sample
L = length(1)
rem ** reset DMA chip
poke DMA,0
rem ** set sample rate and mono mode
rem ** 128 = 6.5 kHz
rem ** 129 = 12.5 kHz
rem ** 130 = 25.6 kHz
rem ** 131 = 51.3 kHz
poke DMA+32,128
```



■ Get a better sound out of your STE with this excellent sample player routine for **STOS BASIC**

```
rem ** set start and end
poke DMA+2,SAMPLE/$10000
poke DMA+4,SAMPLE/$100
poke DMA+6,SAMPLE and $FF
poke DMA+8,SAMPLE/$10000
poke DMA+10,SAMPLE/$100
poke DMA+12,SAMPLE and $FF
poke DMA+14,(SAMPLE+L)/$10000
poke DMA+16,(SAMPLE+L)/$100
poke DMA+28,(SAMPLE+L) and $FF
rem ** play sample thru DMA
rem ** 1 = normal play
rem ** 3 = continuous play
rem ** 0 = turn off sample
poke DMA,3
```

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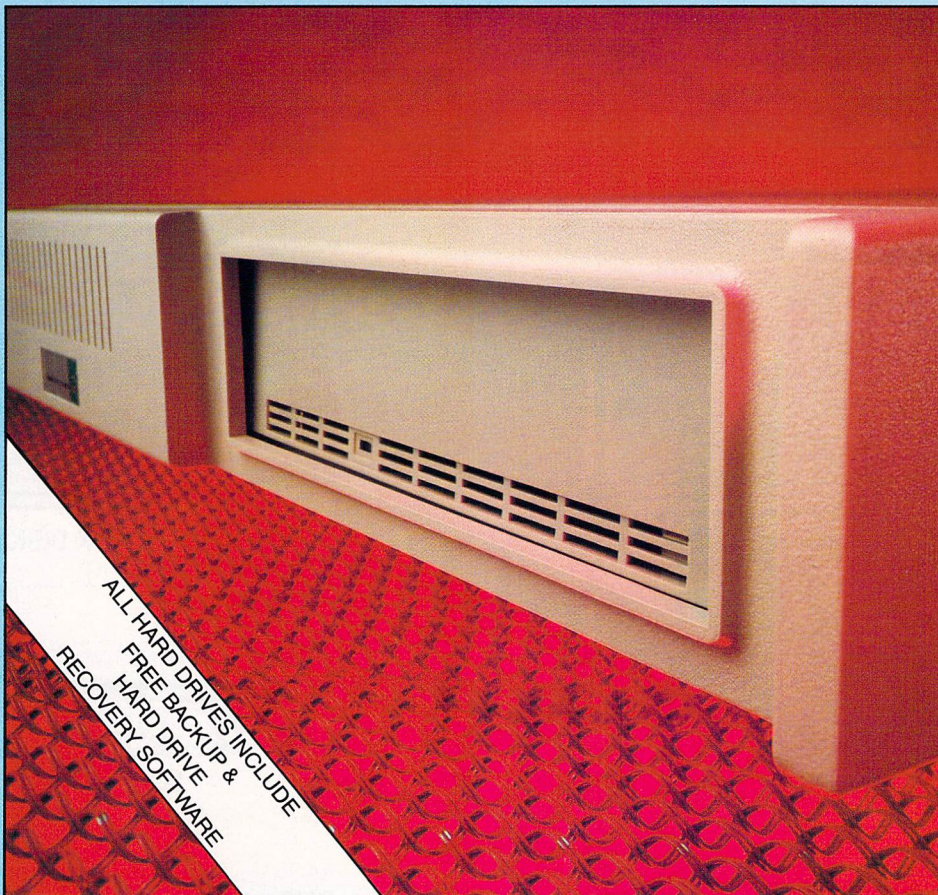
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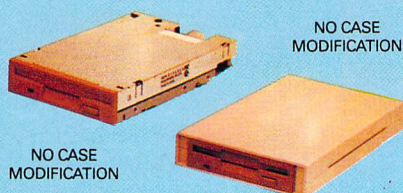
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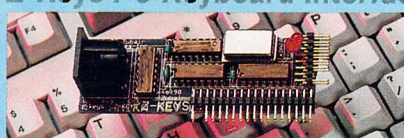
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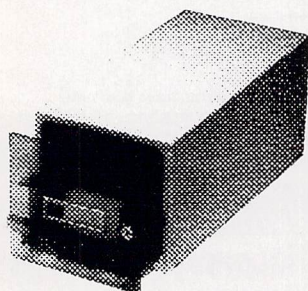
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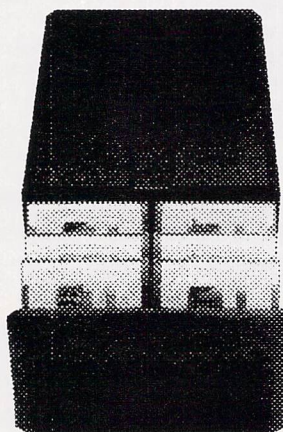
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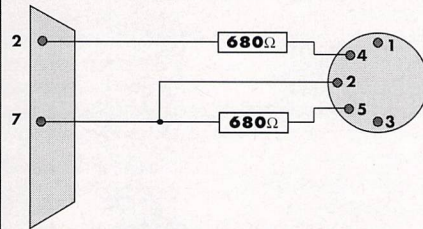
GET ON THE RIGHT TRACK, MAN

This one's a special DIY extravaganza for those of you with a copy of *Trackman 2*, the music/MIDI sequencer available from Hollis Research (☎ 0481 28286). *Trackman 2* has a facility to use up to 32 MIDI channels and can be controlled by special footswitches – providing, of course, that you have the appropriate hardware. You can buy the complete, finished items from Hollis Research directly, or (thanks to John Hollis himself) you can build your own at a fraction of the cost, simply by following these handy circuit diagrams.

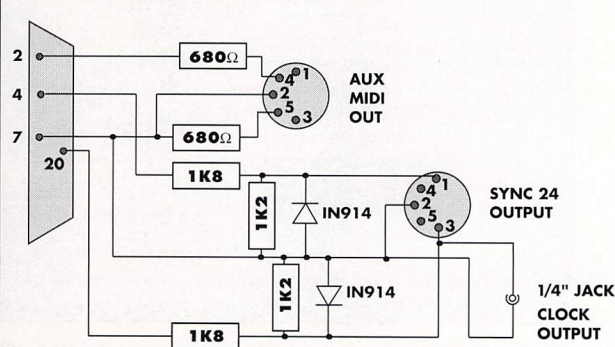
John has kindly included two versions of the footswitch, both of which can be used for a variety of functions with all sorts of other programs. The switch is, after all, only a variation of the joystick Fire button. To patch it into *Trackman*, use the Footswitch dialogue box to set it up the way you want it.

John has also included two versions of the MIDI adapter,

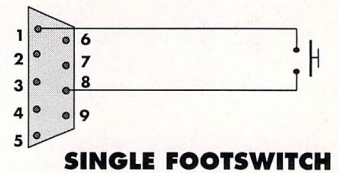
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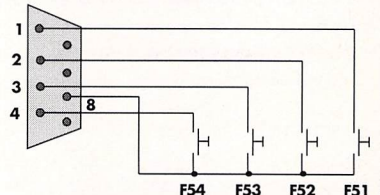


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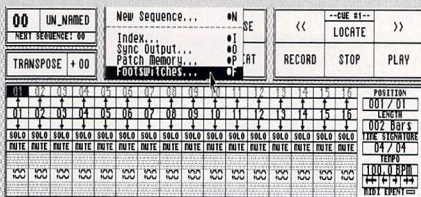


SINGLE FOOTSWITCH

JOYSTICK CONNECTOR



FOOTSWITCH INTERFACE



■ Build a better MIDI control system with these funky DIY circuit diagrams – presented by John Hollis of Hollis Research, for all ST music-lovers

which works with some other sequencer packages as well – the *C-Lab* series for example. The advanced adapter can be connected to some older, pre-MIDI devices (like the Roland TR-808 drum machine) for syncing up to *Trackman*. This is

done via an old version of a MIDI-style standard, known as Sync-24. It's outdated now, but there are still plenty of keyboards, drum-machines, sequencers and such like that are dirt-cheap and would work with this. There's also a quarter-inch jack clock, which you can program from the Sync Output window in *Trackman*. This is suitable for clocking even older music equipment like Drumulators, or as a gate trigger for ancient CV/GATE keyboards.

All the resistors you need to use in these kits are standard quarter-watt 5%-tolerance, and they'll set you back around 2p each from most electronics, TV repair, Maplins or Tandy stores. To make a suitable footswitch cable, you can cannibalise an old joystick or buy a joystick extender cable and simply cut off the unrequired end.

GFA Basic programmer's surgery

Once again, Barrie Capel tackles some more of your GFA Basic programming problems

■ A quick apology to anyone who has written in about a problem but not yet seen an answer to it here. Space is limited, so it has to be "first come, first served." Please note that unfortunately we are unable to reply personally to letters, even if you do supply an SAE.

SAVING PICTURES

Let's start by killing two birds with one stone. Mr **G Kingston** of **Basildon** is writing his own art program, yet when he loads a previously saved picture back in, it seems to have "lost" the colour palette, although it works fine in high res. **Mark Jones** from **Kingswinford** has used the *Degas* load routine from last month's *Surgery* and asks if it can be used without seeing the picture actually load. Read on, both!

Mr Kingston's save routine goes something like this:

```
Sput Screen$
Fileselect File$,Fill$,Fil2$
```

```
If Fil2$=""
Goto Finifile
Endif
If Len(Fil2$)>1
Fil2$=Left$(Fil2$,Len(Fil2$)-3)
Endif
Fill$=Fil2$+Rez$
Bsave Fil$,Xbios(3),32000
```

The giveaway line is the last one – the Bsave. It tells GFA Basic to save on the disk, under the filename stored in the variable `Fil$`, 32,000 bytes of memory from the start of the screen.

This 32,000 bytes is only "bit information" stating which pixels on the screen are set "on," and which are off. Colour information is not part of this data. This works fine in mono because there are only two states for the pixels to be – on or off. No colour!

In medium and low resolution, the fact that a pixel is on or off is not enough. In both colour resolutions, each of the pixels can be one of 512 colours (4,096 on the STE), but you are limited to the number useable at any one time in

each resolution. Take a quick look at last month's *Surgery* for more information.

Because the 32,000 bytes of memory from `Xbios(3)` is only a "map" of which pixels are on and off, you are responsible for the saving of the colour data. The normal way to do it is to "tag" it onto the file just before Bsave'ing it. As explained last month, *Degas Elite*'s palette is at the front of the file.

As long as your load routine matches your save routine you can put it where you like in your picture file, though some form of compatibility with other program "standards" should be encouraged. If you are the only one to be using the resulting picture files, and you never need to import from or export to a paint program like *Degas*, then putting the palette and resolution data at the end of the file is fine.

The big question is where to get the palette from at the time of saving. That is where the `Xbios(7)` call, `setcolor()`, comes in. After the line `reg_colour%=XBios(7,r%,-1)` AND `&H777` the variable `reg_colour%` contains the value of

the colour contained in register r%. The value is a word, and is made up of the red value * 256 + green * 64 + blue - the AND &H777 bit just strips off the unwanted bits.

So, the simplest answer to the problem is to get the current resolution with Xbios(4), the palette, and the screen bit data all into strings and join them together before plonking the whole lot on disk.

The following two listings are examples of a load and save routine for colour pictures and are written in GFA Basic v2.

SAVE PICTURE LISTING - LOW & MED RES COLOUR

```
DIM reg_colour%(15) ! 0 to 15
  registers

rez$=MKI$(XBIOS(4)) ! Current rez as
  string
SGET screen$ ! Screen as string

FOR r%=0 TO 15
  reg_colour%(r%)=XBIOS(7,r%,-1)
  AND &H777 ! Get register contents
palette$=palette$+MKI$(reg_colour%
  (r%)) ! Put into a string
NEXT r%

f$=rez$+palette$+screen$
  ! Join 'em together
BSAVE "test.pic",VARPTR(f$),32034
  ! Plonk file on disk
```

LOAD PICTURE LISTING - LOW & MED RES COLOUR

(To load low res Degas Elite pics, replace the 32034 with 32066)

```
DIM reg_colour%(15)

buffer$=SPACE$(32034)
  ! Prepare buffer
BLOAD "test.pic",VARPTR(buffer$)
  ! Load pic into buffer

rez%=CVI(left$(buffer$,2))
  ! Get picture's rez
palette$=MID$(buffer$,3,32)
  ! Get palette data
screen$=MID$(buffer$,35,32000)
  ! Get screen bit 'map'

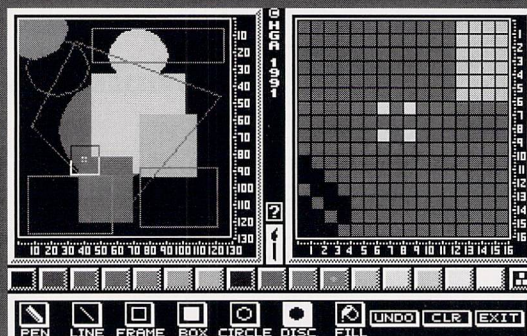
FOR r%=0 TO 15 ! Registers 0-15
```

YOUR BASIC SPRITES

Without doubt, one of the most popular uses for programming with GFA Basic is graphics - and judging by the letters, sprites in particular. Steven Harris from Bristol is just one of many who wrote in asking about moving GET/PUT sprites over the screen without the nasty black rectangle around the sprite wiping everything out.

Preventing this is fairly complicated - it involves creating a special set of frames called "masks" and placing both the masks and the sprites on the screen in a special way. This, along with creating a reasonable animated effect, is possible with a paint program and GFA Basic, but the whole process is infinitely easier with a sprite creation package, where all the hard work has already been done for you. Most even have BASIC routines, written and supplied for you to use - though not all have GFA Basic.

Now, ST FORMAT have their own exclusive sprite animation package, Animaster, written specifically for GFA Basic users, and you really have no excuse for not buying a copy. It offers the facilities of a paint program, has automatic mask creation, the ability to test run and edit your animations and snapshot sections of pictures created with most commercial paint programs - all without leaving Animaster! And if the Bullfrogs' ace programmer Peter Molyneux says it's good, who am I to argue? For information on how to order, see page 44.



```
reg_colour%(r%)=CVI(MID$(palette$,r%
  *2+1,2)) ! Get each one as a num
SETCOLOR r%,reg_colour%(r%)
  ! Set the new colour
NEXT r%

SPUT screen$ ! Show the picture
```

Note that although there are only four registers in medium resolution, you still collect and save 0-15. The file lengths are the same, and the ST just ignores the unwanted registers 4-15.

HALF A MOUSE?

A number of readers recently have commented on the fact that their copy of GFA Basic doesn't run properly in low resolution - it insists on switching to medium resolution, and the mouse pointer can't go past the middle of the screen.

This is in fact normal. In order to fully display the menu bar at the top of the screen, GFA Basic "software switches" to medium res when the menu is on screen. This causes the mouse problem, which incidentally is "fixed" in version 3. However, as long as you load GFA Basic in

low res, your programs always run in low res. "Oh yes," I hear some of you say, "then how are you supposed to run them if the mouse won't go anywhere past the centre of the screen and you can't click on RUN as a result?"

Easy! The menu bar is divided into ten sections, each with two options. Take a quick glance at your ST's keyboard and you notice there are also ten Function keys, numbered F1 to F10. Each F key corresponds to one of the lower entries on the menu. Holding down the <Shift> key and pressing the F keys accesses the upper menu entries, so running a program in low res is simply a case of pressing <Shift>-F10. Load is F1, Save is <Shift>-F1 and so on...

This should all have been stated in the manual on the Cover Disk, so if it wasn't, you can all blame the wally who wrote it. Er, hang on a minute... I wrote it, didn't I? Sorry...

MERGE NOT LOAD

We're still getting quite a few letters from readers struggling to merge files together from FORMAT's GFA Basic Tutorial series (issues 19 to 21). We've covered it previously, so check back on the previous Surgery covering LOAD/MERGE. But, again very quickly, you can only MERGE a .LST file without losing the file currently in memory. LOAD destroys the current program in memory.

If you want to merge two files and they are only on disk as .BAS files, load one in and then use SAVE,A to create a .LST file on disk. Then finally LOAD the other .BAS file in, place the cursor where the new code is to be placed and MERGE the newly created .LST file.

Well, it looks like space has run out yet again. Next month, all things being equal, we'll try to answer a few of your queries about drop-down menus and altering file attributes from within GFA Basic programs. Meanwhile, keep sending in your queries - or if you still haven't got into this BASIC lark, remember that GFA Basic v2 was yours free on Cover Disk 19. For info on how to order back issues, see page 138

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Information is the oxygen of publishing, or something like that, Mrs Thatcher used to say. So if you've got a tip, a short cut, an undocumented feature, a bug, a password - in short, anything at all you've found helps you get more from your ST - we want to hear about it! That way you can share your information with well over 60,000 fellow ST enthusiasts and possibly win up to £50. Or, if you have a technical problem or query, we want to hear about that, too - just giving us the opportunity to wibble on a bit could win you £20. Do it now and make an old politician - er, older.



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MIDI helpfile

MIDI problems? Try some of Vic Lennard's sound advice



More timbre than a rainforest?

I have a Roland P-330 and the 360 Systems Pro MIDI Bass. Can more than one sound be played at the same time on either of these, or do any retrofits exist to upgrade them?

What you are, in effect, asking is whether either of these devices is multi-timbral. This is when a synth has the ability to play multiple sounds on different MIDI channels simultaneously. Turn to page 128 for a full explanation of what this means and a survey of multi-timbral devices.

Roland's P-330 gives you either 10 or 16 note polyphony, depending on the voice you are using, but it can only respond on a single MIDI channel – so it is not multi-timbral.

The 360 Systems Pro MIDI Bass is monophonic – only one note at a time – but you can split the MIDI note range into two “zones,” then assign two different sounds and let the velocity value of the incoming MIDI note decide which one is triggered. The one below the threshold is called the “normal” note and the one above the “accent” note. So, you can select four sounds to play, but only one at a time. Again, no multi-timbral capability. One thing you could do is set two sounds you like to the normal and accented notes of a zone and then use a sequencer to play notes with a velocity just above or below the threshold to switch between the two sounds.

The term “multi-timbral” is not defined in the MIDI Specification and has caused many

problems over the past couple of years. Some devices can have their MIDI note range divided into zones but only respond on a single MIDI channel – an arrangement typical of early samplers. These should really be called “multi-zone.” Also, some devices can only assign a single note to each part, while others require you to set the number of notes being played by each part – in other words, they can't dynamically allocate their voices. Make sure the multi-timbral device you buy can give you the performance you require.

Getting through the gate

I use Hollis Research's Trackman sequencer on an ST and have just bought a Roland Octopad. Playing a basic drum rhythm only seems to trigger some of the notes – and the faster I play, the worse the problem.

To understand the problem, you need to have a clear picture of how the Octopad works. To an extent, it is analogous to a keyboard: the first time you hit a pad, a MIDI Note On for the note value of that pad is sent out with a velocity proportional to how hard you hit it. When you release a keyboard note, a MIDI Note Off is sent – but how do you get a Note Off with the Octopad? The answer is via a Gate Time that you have to set. This is the length of the note at the end of which a Note Off is sent. If you hit the same pad before the Note Off has been

generated, a Note Off is sent, immediately followed by another Note On of the same value.

The minimum Gate Time varies depending on whether you have the earlier Pad 8 or the later Pad 80. The Pad 8 gives values between 1 and 60, apparently in units of around a 16th of a second. The Pad 80 gives values between 0.1 and 4 seconds.

This concept can cause problems with sequencers because the Note Off and Note On are so close together if the second hit occurs before the Gate Time for the first has expired. This would also explain why the situation worsens when you play faster.

The good news is that John Hollis of Hollis Research has now sorted out this problem and is currently having the improved software tested. If you use Trackman and have come across this problem, give him a call on 0481 28286 for a replacement disk. **stf**

BEAT THE MIDI BLUES

Whether you're having trouble with your setup or your software, Vic Lennard can help answer all your MIDI queries. For only £34.50, you can join the UK MIDI Association (☎ 081 368 3667) and get UKMA's monthly newsletter *MIDI Monitor*, plus free on-line support and advice. Alternatively, you can take advantage of Vic's expertise by writing to MIDI Helpfile, *ST FORMAT*, 30 Monmouth Street, Bath BA1 2BW. Remember to enclose full details of your MIDI setup and a diagram if you can manage it.

THE KEY TO GETTING IT ALL TOGETHER

I have an electronic piano, equipped with MIDI sockets, and an Atari ST which I use as a sequencer. The piano is velocity sensitive, but has no aftertouch. I have recently acquired a sample playing keyboard with aftertouch and release velocity (whatever that is) which I intend to use as an expander, to enable several other non-piano type tracks to be recorded and played back using the ST sequencer. However, I cannot use the piano as the master keyboard, to program in aftertouch for the tracks allocated to the sample player, and I always get the piano coming out as well anyway. How am I supposed to connect these three items together?

Without knowing exactly what items you have, I can only answer in general terms. If you are using the piano as your master keyboard, you

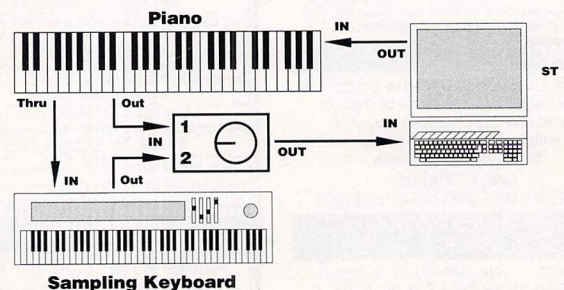
hear the piano sound each time you press a key. The only way around this is either to turn the volume down, in which case you don't hear the piano playing back from a track on the sequencer, or to use Local Control. This divorces the keyboard part of the piano from its internal sound source and effectively gives you a separate keyboard and sound module.

However, your piano may not have this facility. If you look at the MIDI Implementation table, it only shows if the piano recognises Local Control but doesn't tell you if you can actually turn it off via the piano. If it can recognise the command but can't access it from the piano itself, send it the following message via the sequencer:

Bn 7A 00

This turns the Local Control off and you can then use the set-up in diagram 1 (at left).

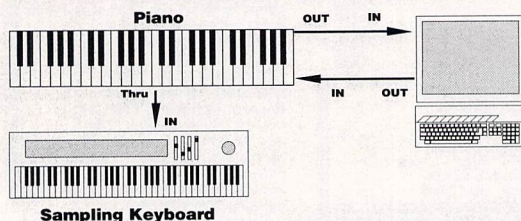
If the piano does not respond to Local Control, there are other problems. When you play the piano into the sequencer and the



■ **Diagram 2** This setup, using a MIDI switch box (centre), enables you in effect to re-cable your setup whenever you switch keyboards

sequencer is transmitting the notes back to the piano, you end up with the notes being played twice, once by you and once by the sequencer. Some sequencers get around this by enabling you to set an auto-off channel – which suppresses the notes on the MIDI channel on which the piano is receiving when you are playing the piano, so you hear only the notes you're making with your fingers.

If you want aftertouch, you are going to have to play the notes in from the sampler keyboard. This entails re-cabling your setup each time you change keyboard, so I would suggest getting a MIDI Switch box (around £25) and wiring the system as in diagram 2 above.



■ **Diagram 1:** This shows the setup you can use to connect piano, keyboard and ST if the piano recognises Local Control Off

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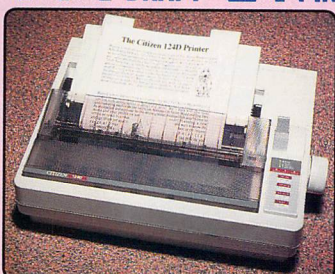
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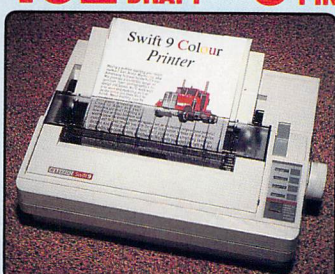
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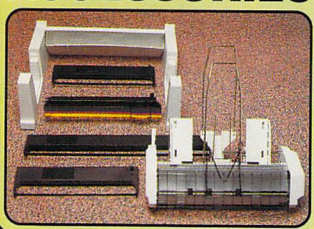
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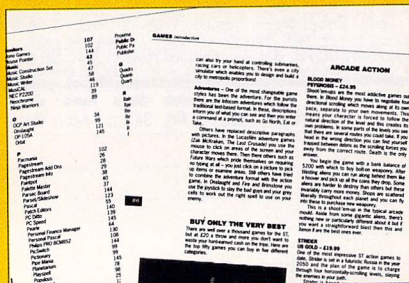
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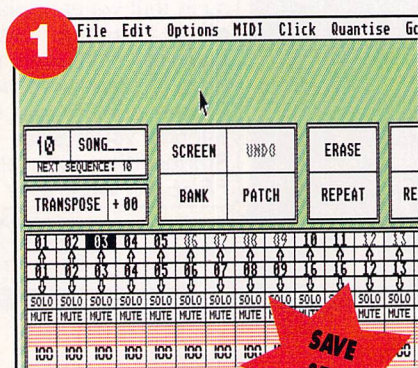
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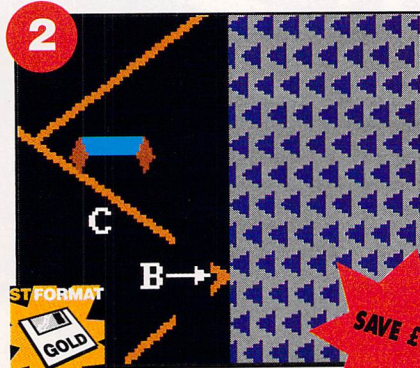
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Sounds complex



To produce rich, complex MIDI music, you need a multi-timbral synthesiser – one that can play several independent parts at one time. Vic Lennard explains how they work and surveys some of the best buys still available

■ Roland's U-110 synthesiser not only plays six parts at once but uses real sampled sounds to boot

Okay, you've found the MIDI sockets on the side of your ST and decided you want to make some music. The first step is a sequencing program – perhaps Accompanist, Henry Cosh's Public Domain sequencer (an exclusive version of which was yours free on *FORMAT* Cover Disk 16 – see page 138 if you missed it), or one of the budget commercial programs like Gajits' *Sequencer One* (£89.99, Gajits ☎ 061 236 2515).

A sequencer "records" the timing of the notes you play on a MIDI keyboard attached to the ST's MIDI In, as well as other information like sustain pedal or pitch bend. It's not the same as recording onto tape – you don't record the actual sound, only the note information – and the sounds come out from a MIDI synth, connected to the ST's MIDI Out. So to create music you need a keyboard and a sound module – and here, unless you're careful, the expense starts.

Every synth has a "polyphony" – the total number of notes which can be played at the same time – and since a synth is not just like a piano, it is useful to have as high a polyphony as possible. You may wonder what the point is of having more than ten notes available – after all,

we only have ten fingers – but once you start working with a sequencer, you inherit the ability of a family of octopuses (octopi?) and the worst thing that can happen is that notes start to disappear. This is called note-stealing, and it occurs when the number of notes being received exceeds the polyphony of the instrument. While it was usual for a synth to have a

polyphony of 8 or 12 notes in the past, 24 to 32 notes is becoming the norm now.

Let's say you want to write a song with piano, bass, drums and a synth lead line. That means using four different sound sources – one for each of the different sounds, including a drum sound module. Even though the total number of notes you need at any moment is probably less than the (say) 12 note polyphony of one synth, each synth can actually produce only one sound at a time – or can it?

Many modern synths are *multi-timbral*, meaning that they can play many independent sounds, or parts, at the same time. You can look at a multi-timbral synth as being several sound modules all built into one box, each controlled on a different MIDI channel – and from *FORMAT*'s special introduction to MIDI in issue 19 you may recall that there are 16 of these channels. The first multi-timbral synth, the Roland MT-32, appeared about four years ago and has the capability of playing between 8 and 32 notes, depending on how complex the sounds are that are being used. This is because it creates sounds by combining bits of sounds – for instance the attack part of a piano and the release of a violin. This Roland method of synthesis is called Linear Arithmetic or LA for short. A total of 32 of these "part-sounds" – or *partials* as they are correctly termed – are available



■ The Roland MT-32 – the first multi-timbral synth – can produce up to nine different parts at one time

"Multi-timbral synths can play many independent sounds, or parts, at the same time – like several sound modules all built into one box"

within the MT-32, with a maximum of four being used by any one sound.

This system makes it very difficult to calculate the precise polyphony available at any moment. However, up to nine different sounds can be played at the same time – eight synth sounds and a full drum kit of 30 instruments. The MT-32's sound quality is reasonable, and though it is no longer manufactured you can

■ The D-110 – successor to the MT-32 – also uses the Roland system that creates sounds by combining parts of sounds



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Even though a multi-timbral synth appears to be the answer to writing a complete song from one instrument, there are some compromises. The first is that there are often only two outputs for left and right stereo. For many people, that can be an advantage in that you don't need to have a separate mixer to combine together multiple outputs, but the disadvantage is the lack of flexibility. Taking the example of the MT-32, all the synth sounds and the drum kit appear at the stereo outputs, meaning that you can't handle them separately – you can't add treble or bass to one sound without affecting them all. What you can do is to decide on their position in the stereo "picture" – the MT-32 enables you to position instruments in a 15-position spread between the outputs.

Another nice feature in most multi-timbral synths is the built-in effects like reverb and chorus. Again, there may be problems with tweaking only certain instruments, especially individual drum sounds. The MT-32 has the facility for having reverb on individual drum sounds, but you can't access that facility from the front panel of the synth, only over MIDI by special commands.

The Evolution EVS-1, rated a healthy 88% in *ST FORMAT* 15, is another good, all-in-one unit. Retailing at £310 (Sound Technology ☎ 0462 480000), it gives you 16 note polyphony and eight independent parts including sampled drum sounds and a free visual editor for the ST. Yamaha's TX81Z (now discontinued) gives you only four parts and no drums, but can be picked up second-hand for around £150. Another favourite is Kawai's K1 range, which includes

keyboard, rackmount and stand-alone versions. Each of these gives you eight parts and can include drum sounds, since they use a similar synthesis to Roland's LA. These can be picked up second-hand at around £250 for the keyboard and around £180 for the other two types.

While the Yamaha PSS range of synths can play drums, bass, accompaniment and a lead line (see the special feature last issue), they aren't strictly "multi-timbral" synths and aren't designed to be used in conjunction with an external sequencer. But there is nothing to stop

"With a sequencer you can produce as many notes as a family of octopuses – but if the number of notes exceeds the polyphony of your instrument, notes can start to disappear"

you from buying a cheap one simply to use as a keyboard – the PSS-680/780 can be found second-hand from around £70. Otherwise, you are going to need a keyboard to play the notes from, and another possibility is the Roland PC-200, which sells for £175 (Roland ☎ 0252 816181). This doesn't have any sounds on-board but is quite sophisticated and gives you five octaves of reasonable-sized keys.

Another unit worth looking for is Roland's U-110 (now discontinued). This uses preset samples, so a brass sound is real brass and a piano real piano. It offers polyphony of 31 notes, six part multi-timbral, reverb, chorus and six out-

puts. You should be able to find one for around £250, especially since it has now been superseded by the U-220, which is rather more expensive (about £730, though it varies from supplier to supplier). Other options include the Yamaha DX11 keyboard (discontinued, but you might find one for around £300); the Roland D-110 (the MT-32's successor), which has eight parts, six outputs and effects – about £600 retail but a second-hand snip for about £250 – and the Roland D-5, a keyboard version for around £600 retail or £350 second-hand. You could also consider Yamaha's replacements for the TX81Z and the DX11 mentioned above: the TG55 weighs in at £499, and the impressive SY22 keyboard tips the scales at a hefty £839 (Yamaha ☎ 0908 366700).

So, what should you look out for in a multi-timbral synth? Polyphony – how many notes are available in total. There is little point having eight parts with only 12 notes or so when you are working from a sequencer. How many parts are there? How many outputs are there? What limitations are there on any effects – are they shared among the parts? Is there a rhythm part – how good are the drums? Can you easily edit the sounds or are you lumbered with the presets? Are there any card or cartridge slots for extra sounds? Can you dump the internal memories over MIDI to your sequencer so that you can edit sounds and keep the good ones?

To find one, try the classifieds in music magazines and mart papers. You can find real bargains if you look. Good hunting! **stf**

■ Next month we review AVR's new hard drive sampler, which can produce CD-quality samples. To make sure you don't miss it, turn to page 138

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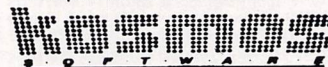
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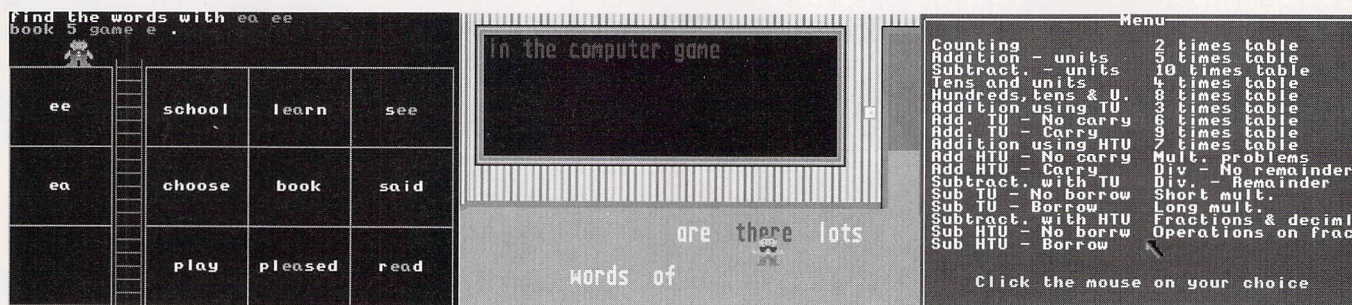
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■ This easy-to-use platform environment is central to the first games in Module 1

■ In *Prof Makes Sentences* children use a fairly simple classroom environment

■ This is LCL's *Primary Maths* menu. Right, children – disk sector 35, question 17

One for all the family?

Atari's new Family Curriculum pack seems to have something to offer everyone from infants to their parents. David Jones investigates how the ambitious new package measures up

Ask Atari what interest they have in the world of education and they're likely to tell you they have a number of educational advisers working for them, they're in constant consultation with various LEAs and they're promoting their machines in many schools and colleges. However, words are one thing, actions another. To date there has been little to show for all this consulting. With the advent of Atari's latest bundled pack, "Family Curriculum," are we perhaps seeing at least a small amount of commitment in this area?

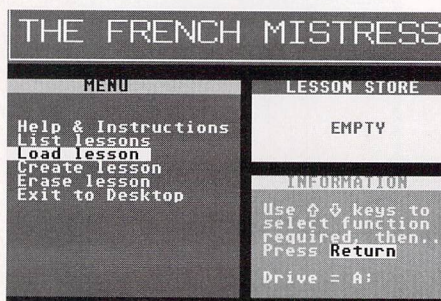
As *ST FORMAT* reported in issue 22, the new pack is a large one. For an attractive £399 you get a 1040STE and five "modules" or boxes of educational software. In all, the boxes contain 12 double-sided disks and nearly 700 pages in manuals. The first three modules in the pack contain programs and data files aimed at pre-school/infant, junior and secondary school children respectively. The other two – "Creative Computing" and "Business Computing" – are, one would suppose, included in response to various statements made in the National Curriculum for Information Technology. Between them, these two modules contain six apparently weighty applications.

Attractive though the pack looks, its release may be a case of too little too late. Presumably, Atari are hoping to cash in on the vital importance of Information Technology and the use of computers which is now compulsory in the school curriculum. But for some children, it has

been compulsory for the best part of a year already, and in that time other manufacturers have been determinedly targeting both the school and the home learning market. Acorn seem to have cornered the former, with around 85% of all schools using their machines. Atari seem happy not to have their machines in schools and are now targeting the home educational market – but for their strategy to succeed, the new pack had better be pretty good.

Module 1: Play and Learn

This set of programs is aimed at young children (4 to 9) and comprises the first three of Prisma's much praised and respected *Play and Read* series. Along with the software and manual you also get five small reading books which are integral to the packages. What you don't get is Prisma's introductory disk and story cassette,

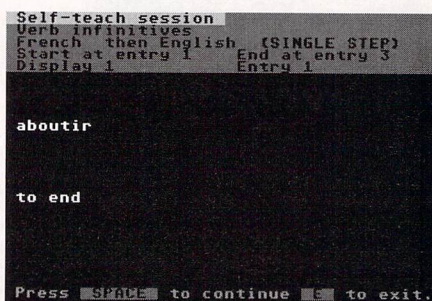


■ In module 3, GCSE Revision is emphasised. While *French Mistress* is a good language program...

originally released with the first program in the series – an important addition, setting the scene for the programs as well as introducing the computer keyboard and mouse to very young users. You can, however, buy this by mail order for an extra £8.50.

The series begins with *Prof Plays a New Game*, in which you move the cute little sprite Prof up and down ladders and around platforms in an attempt to match pairs of words. The words used in the game are identical to those in the accompanying books, so using one reinforces the other. The program is played on five levels (one corresponding to each book) which become increasingly difficult, and each level is sub-divided into five further "steps." Starting with the easiest step in book one, children are introduced to simple words such as "I," "play" and "school," and by the time they have worked their way through to the end of book five they should have developed a fundamental reading vocabulary of 63 words.

Two further programs in the pack reinforce and extend basic reading skills. In *Prof Looks at Words* children have to search for letters to complete words in the familiar platform environment. There are five games to choose from, ranging from one where you must find the missing first letters of words to one where you seek out com-



It is badly marred by slow and archaic menu systems and totally uninspiring work screens

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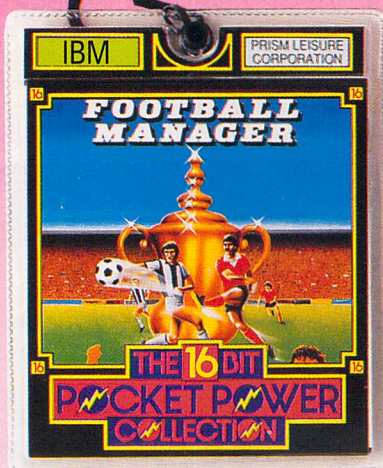
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binations of vowels. In *Prof Makes Sentences*, children are now placed into a classroom complete with blackboard. Here they either select words to finish sentences or form complete sentences from a jumbled list of words.

This group of programs is an excellent introduction to basic literacy. A fourth package (*Prof Hunts for Words*) is now available to build on this foundation, and more should be out soon.

STF Rating – 94%

Module 2: Junior School

This second box of programs, aimed at seven to ten year olds, centres on Kosmos' *Answer Back Quizzes* and also includes a basic Maths program from LCL.

The quiz program is an adaptable educational tool. You can load and use the various files that come with it, purchase from a huge range of additional data disks or use the built-in editor to create your own quizzes. The files provided with the program are reasonably well written. Some questions may need careful revision as the National Curriculum absorbs more subjects including Geography and History.

The *Answer Back Quizzes* include a total of 35 files testing spelling and general knowledge with, between them, some 1,250 questions. The one major drawback is that to load any file, you have to answer numerous questions and set various parameters. For most children, this is bound to be too frustrating to persevere with. Once the data is loaded, however, you are presented with a well-drawn screen, complete with princess and medieval castle. You can opt to play a simple arcade-type game as a reward for getting questions right. Here, you must shoot a dragon before it reaches the princess.

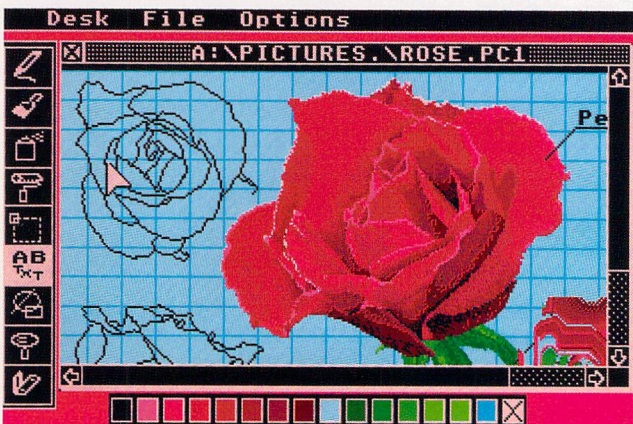
Primary Maths from LCL consists of some 33 simple maths programs, including the times tables between two and ten. The initial menu is confusing, but the program screens themselves are clear and easy to use. Each is rather basic and looks rather dated, although colourful sprites are used to reinforce simple number concepts. The major gripe with *Primary Maths* is that you can enter numbers only by using the mouse – rather clumsy, especially for this age group.

STF Rating – 81%

Module 3: GCSE Revision

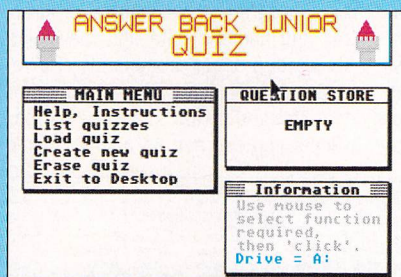
Hoping your ST can get you through your GCSEs? Forget it. This is the area most poorly supported by ST software in general. Here you find three adequate entries:

- *Geography Quiz*: a fairly good data file of

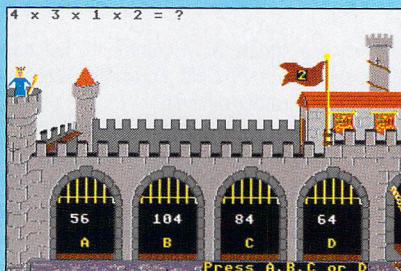


■ *Hyperpaint*, part of module 4, is simple to use but insubstantial

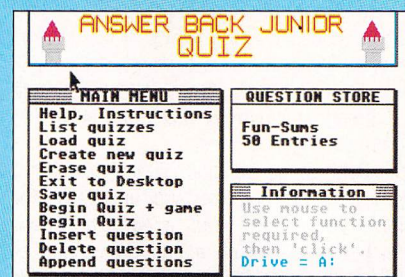
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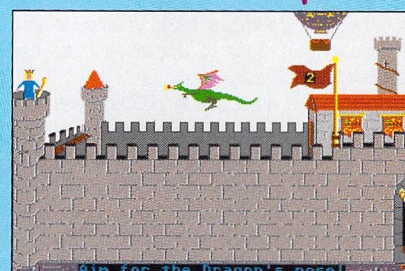
■ Here is the opening screen to Kosmos' *Answer Back Quiz* program in Module 2...



■ Kosmos' *Answer Back Quizzes* are presented from this rather jolly medieval castle...



Load in some questions and it becomes far too confusing for the age group it's aimed at



Answer a question correctly and you can go after the dragon and save the princess

500 questions for use with the *Answer Back Quiz* from Module 2.

- *French Mistress*: a comprehensive French language tutor from Kosmos, with a vocabulary of over 2,500 words. However, screen presentation is very poor and the program is riddled with slow, archaic menus.

- *LCL's Micro Maths*. Presumably a step up from *Primary Maths*. The manual boasts that "the 59 topics covered include the topics common to all examining boards." A bold claim that we were unable to check out – the program was missing from our review disk!

STF Rating – 71%

Module 4: Creative Computing

Rather an odd title for a box that contains a simple art program, a music package and a BASIC compiler. As far as National Curriculum Information Technology is concerned, one of these areas (Art and Graphics) is compulsory and the others (computer generated music and BASIC programming) are at best considered optional.

Hyperpaint is an easy to use, fairly reasonable, introductory art program. It includes many (if not all) of the functions budding young artists require to enter the world of computer graphics. Most options can be selected from a narrow bar to the left of the screen containing a collection of icons. The program is reasonably self-explanatory and is powerful enough to see kids up to GCSE. One of its major strengths is the ability to import and export files in a variety of formats. This means that pre-drawn, scanned or digitised images can be

imported and edited in *Hyperpaint* and then exported to another application such as a desktop publisher – not vital for the National Curriculum, but good to have anyway.

First BASIC, an adequate compiler, has been bundled with STs for some time now and it seems reasonable to include it here – except that the use of a LOGO compiler is an essential part of the National Curriculum, and this language and its distinctive "turtle" pointer icon are noticeably absent.

STE Music Maker is described as "the complete package for the beginner to Computer Music." It includes a composer, a MIDI recorder and a drum pattern designer/editor, all very easy to use. The major drawback is that the three sections are unrelated to one another.

Creative computing? Maybe that's a bit of an exaggeration. And from the National Curriculum point of view, the lack of a LOGO compiler is a serious shortcoming.

STF Rating – 79%

Module 5: Business Computing

The final, and potentially most important, module of the Family Curriculum bundle contains a word processor, a database and a spreadsheet. Sadly, however, Atari have decided to use Kuma's rather weak products.

The word processor, *ST Word*, is a poor choice compared to most similar ST packages. Even the most basic examination syllabuses require pupils to carry out a number of manipulations that are simply beyond this program. You can't, for example, mark and move a block of text without resorting to a second text window, making the operation both difficult and clumsy.

Line spacing is fixed at a single line, and once it's entered text cannot be reformatted (from justified to unjustified and vice versa). If you want bold, underscored or italic text, forget it! All of these functions are essential for secondary school children, according to both exam

syllabuses and the National Curriculum. Finally, it's almost unbelievable that in a WP included in an educational bundle the spell checker has to be loaded outside of the main program!

Word processing is a vital skill for children to acquire. This program is of very limited use in developing such a skill. Maybe children can use it to write their Christmas thank you letters to grandma, but that's about it.

ST Data is the bundled database – but it is clumsy in the extreme and unsuitable for children's use. Kids need a straightforward approach to the collection and processing of data. They should be able to design the various fields in which data should be placed, enter that data, sort it and finally search it and print out the results of their searches. ST Data does enable them to do these basic manipulations, but it is about as easy to use as a Lada car manual written in Russian.

To produce a database in ST Data you first have to load a design program where you can enter your field types and sizes, along with the labels they should include. Then you must load up the database and import the designed file. You are now in a position to enter your data into the database. With searching and sorting being far from straightforward, children may find that

this clumsy, limited program could put them off using databases for life!

The spreadsheet, ST Calc, is a fairly basic, inoffensive, program that enables children to enter text and numeric data and manipulate it using standard process commands. However, the program cannot deal with multiple numeric cells in a straightforward manner. With most spreadsheets you can add up a long column of

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■ Kuma's ST Calc is simple – a little too simple!

data using a simple SUM command, but this is not possible with ST Calc. Formatting cells also tends to be a rather difficult.

This final module should have been the most important in the Family Curriculum pack, yet it is the poorest. One of the major strengths of the ST is the wide variety of industry-standard software available, yet Atari have chosen to include cheap and fundamentally flawed applications. The Kuma programs are non-standard,

archaic, slow and clumsy, and as such were an awful choice for an educational package.

STF Rating – 62%

The Verdict?

Any moves by Atari towards the educational field are most welcome. Here they are offering a bundle containing a range of software for the price of an STE – the software is effectively free. Anyone looking to buy a computer to supplement a child's school work would be well advised to seriously consider the Family Curriculum pack. The first four modules are well presented and meet their aims in an admirable way.

Parents should, however, be aware that the programs in the pack are not necessarily the best on the market, they are simply examples of what is available – in the case of the non-standard Kuma software in the final module, not very good examples. The inclusion of these is a serious shortcoming: buy the Family Curriculum pack and you soon find that you need to get a decent word processor and possibly a database and spreadsheet. The Family Curriculum pack, therefore, fails to be all things to all people – but even though it is by no means perfect, it is still the best of the computer and educational software bundles around at the moment. **stf**

How to spell it out

David Jones finds what a basic skills package should be like



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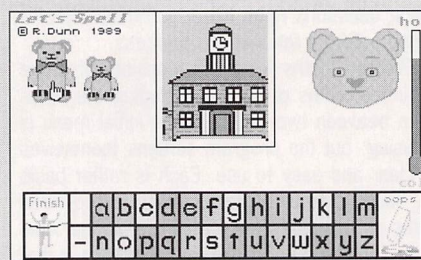
Richard Dunn's *Let's Spell* series is widely regarded as being among the brightest and best of all early-spelling tutors for your ST. There are now five separate *Let's Spell* packages. The previous four helped children to spell "...at the shops" and "...at home" in both English and French.

After loading, each of these programs presents a well-drawn, user-friendly main menu. Here it's a bus station, with a bus representing each of the eight areas covered – Park, Zoo, Country, Farm and so on. The mouse pointer takes the form of a girl or (following a right-button click) a boy. Choose your destination, click on the bus, and off we go...

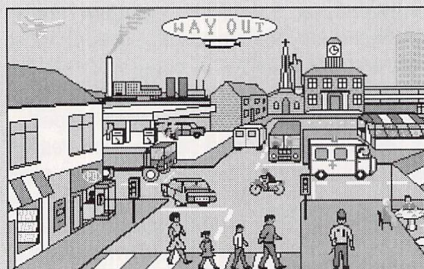
The scenes are carefully and accurately drawn, and full of activity – they cannot fail to

stimulate any child's imagination. Move the pointer over the screen and it becomes an arm. Touch an object and a bell rings. Then a click of the mouse button takes you to the spelling screen, featuring a large picture of the item in question. To its left are two teddies you can click on to set the difficulty level – either for 4 to 6 year olds or for 6 to 9 year olds.

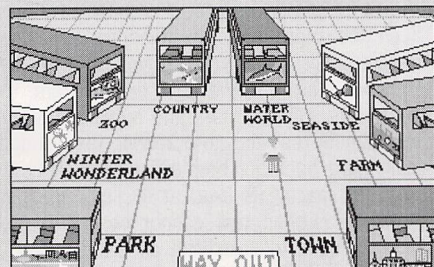
You pick letters from a large bar at the bottom of the screen. At the lower level, the word to be spelled is shown on screen and you simply try to reproduce it. This help facility



■ *Let's Spell's* bold, bright workscreen. Pick a ted to set the difficulty level, then choose letters



■ The town picture is typical of all the *Let's Spell* screens – bright, colourful and great fun to use



■ Where shall we go today? Get aboard the right bus at the *Let's Spell* bus station and take a trip

does not exist at the higher level. A second "spelling aid" can be called up in the form of a thermometer which shows you how close the mouse pointer is to the next letter to be chosen. As each letter is selected its phonetic sound is read out by a digitised voice: "ah," "ber," "cer" and so on. Spell a word correctly and the voice says "well done," then the scenic picture reappears.

Each *Let's Spell* package is limited to a vocabulary of just over 100 words – which can

be regarded as both an advantage (because younger children can concentrate their efforts on a manageable number of words) and a disadvantage (because older children may soon tire of the limited vocabulary).

The series has been criticised for the fact that the words available cannot be altered or added to, but I understand that Richard Dunn is now planning a *Let's Spell* construction pack to remedy this apparent problem. Even as it is, though, the *Let's Spell* series is beautifully presented, both easy and stimulating for children to use. A lesson for everyone here. **stf**

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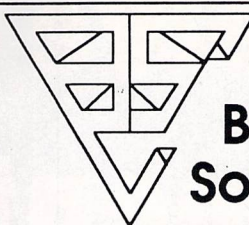
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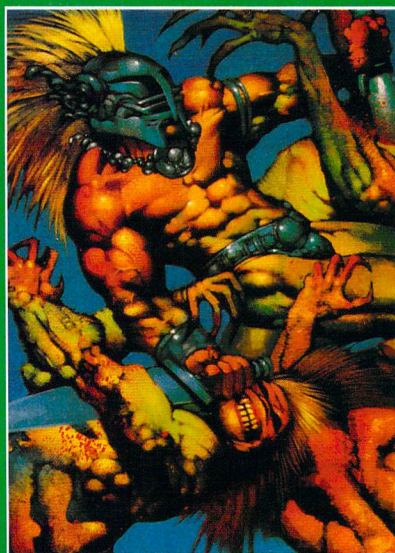
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ISSUE 14
Disk: Together for the first time: fully useable demos of *Yolanda* and *Rick Dangerous*
Inside: Why do games cost so much? *Megapaint 2* – an instant ST art classic?



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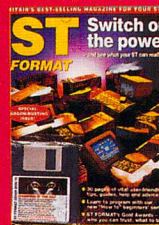
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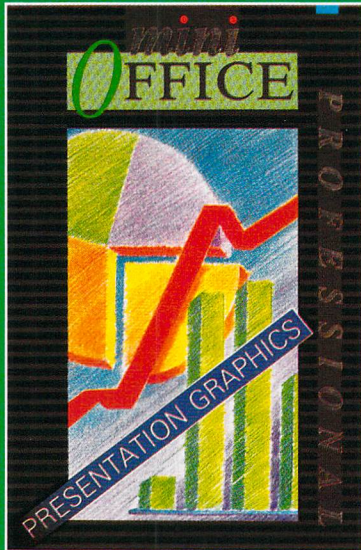


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Feedback

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Policy for piracy

I've seen various views on piracy expressed in Feedback. I don't mean to start the ball rolling again but it's high time people realise that it's not just the end users who are the guilty ones.

I work in a Virgin Computer Games store in central London. We sell thousands of games for 13 computers and six consoles. A year ago Virgin introduced a new policy which stated that any customer may return a game bought from Virgin – as long as there is proof of purchase.

This is fair enough if the game won't load, has no instructions or can't be used. But since this policy was introduced, software has been regularly bought and then returned the next day to exchange it for a different title – even when the software has nothing wrong with it. That way the buyer gets several games for the price of one. This buy and return method is popular among schoolkids who take turns to return a game so as not to get caught. When this matter is mentioned to the manager, nothing can be done because a policy is a policy. Surely the big brass are encouraging piracy?

Tan Shah
London

stf Not so much encouraging piracy as closing their eyes to it. Let's face it, everyone commits exactly the same crime when a friend copies

software and you don't report him to FAST. It's the programmers and software houses who lose out most from this kind of activity.

The problem seems to be that Virgin have established a policy which treats computer games in the same way as CDs or records. If you don't like a CD you've bought, you can often exchange it. I'm sure many children abuse this system and copy the CDs, but what they end up with is an inferior version of the original. In the case of ST games, a pirated copy runs just as well as the original – no drop outs in sound or occasional picture flutters. The temptation to rip off games is that much stronger.

Consider keeping a record of the people who come into the shop to exchange games and build up a list of dodgy characters. If the crime is as widespread as you suggest, take it to your bosses. Virgin inevitably lose money from this kind of activity and they should think about coming up with a different system.

Cheaper words wanted

A few weeks ago I decided to complete the coursework for my A-levels on a word processor. I began to look through some back issues of ST FORMAT and found to my horror that it would cost me about £70 for a word pro- ➤

GIVE GAME-MAKERS MORE CREDIT

Why is it that game publishers get all the credit? In the record and book industry, musicians and authors always get their names onto the cover of their work and any publishing company is in tiny lettering.

Publishers plough all the money into a game and get it onto the shelves, but the game itself isn't their design. Even the best software publishers occasionally produce rubbish, so you can't always trust their name on the box. I would have thought that good programmers would be keen to get their name on the packaging. When the same software house that handles their game proceeds to turn out rubbish, some of that reputation is inevitably going to rub off on the good games too.

Can you explain to me why games have always been sold in this way?

Stuart Camden
Tadworth, Surrey

stf Programmers can build a reputation for being good game-makers – the Bitmap

Brothers and Bullfrog are both well-known for producing such hits as Xenon 2 and Populous. The Mirrorsoft and Electronic Arts logos were all over the packaging but the names of the programmers also made it onto the box.

It does seem illogical that the software publishers go to



so much trouble to establish different labels for their games but never push the authors' names more rigorously. The argument is that game-players like particular types of games rather than all the games from a specific team. For example, someone who buys Power-monger for its strategy element is not necessarily going to enjoy Flood, the Bullfrogs' cutesy platformer.

The Bitmaps were so keen that game authors should be

given more prominence that they established Renegade. This profit-sharing software publisher pushes the name of the programming team more than any other label.

Computer games were first programmed by kids in the bedroom. The games were often dreadful and the programmers were just out for a quick buck, so they sold their creations to the games houses as fast as they could.

The games industry is still in its infancy, and few programmers have tried to change things, just because "that's the way it's always been done." For obvious reasons, software publishers are keen to maintain the current situation. However, now that the Bitmaps have started to make noises with Renegade, I think we may be seeing some changes in the future.

In ST FORMAT we regularly try to focus on the personality of the programming teams – as you can see with our Top 20 games sections and our interviews for Gallery.

SHORT BUT SWEET

■ If you can fit all you want to say on a postcard, just send it to the usual address

■ I have recently bought a 520STFM Discovery Pack and have decided to upgrade it to 1MByte in order to play some 1MByte games. However, I'm confused as to what is required. Do I need a plug-in or soldered board? Populated or unpopulated?

Brian Thompson, Essex

– From our questionnaire results we established that many of you want to invest in a memory upgrade. We're therefore taking a detailed look at the subject in next month's issue. Catch Issue 25 out Thursday 11 July.

■ I have only recently bought an Atari and would like to know where I could get a copy of the classic game Tetris – none of the software distributors seem to stock it any more.

Mr Kwai Yu, Harrow

– Mirrorsoft released the official ST Tetris about four years ago but a much better version has appeared in the Public Domain since then. STetris is available from the SouthWest Software Library for less than four pounds – see PD directory, page 100. Infogrames have also written a full-price version – see SScreenplay Extra, page 71.

■ Recently I checked my Lost Patrol disk for viruses and found that it had one. When I repaired the disk I found my game wouldn't load any more. Why?

J. Cadman, Wales

– To protect games from unlawful copying, programmers set up weird disk formats, harmless to your ST but detected as viruses by virus killers. When you repair the disk the weird format is corrupted and the game is ruined. Speak to publishers Ocean on 061 832 6633 to see if they can help and keep an eye out for our forthcoming virus feature.

■ I am writing in defence of Evesham Micros, with reference to a letter you received from a Mr Steve Bamber (STF 23). He said that they had messed him around and he had to wait ages for his goods to arrive. I purchased an ST from them, and found their service friendly and efficient. They were very organised – even when their computer broke down while I was in the process of ordering.

Peter Newman, West Midlands

– Glad to hear it, Peter. Bet they weren't using an ST to do the ordering.

■ Can you tell me why I can't make my STE boot up in medium resolution?

Stuart O'Neil, Peterborough

– Early STEs were troubled by a bug which made it impossible to save a medium res boot-up file. That was remedied when Atari released a new version of TOS. They also released a medium res patch into the Public Domain, curing the problem for existing STE owners – to get hold of it, contact a PD library listed in our directory, page 100, or speak to Atari on 0753 33344.

■ I'm using my ST for programming and have discovered there are a bewildering number of filename extensions. Some are obvious, but others aren't. Can you help out?

M Walmsley, Winslow, Bucks

– Apart from program files (with PRG, TOS or APP filename extensions), there are no standardised file extension types. Various applications like databases, spreadsheets and some graphics packages use SEQ or DAT file types, but a file's extension doesn't change the way it's understood by your ST. Watch for more in a future DESKTOP.

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cessor. I could buy a second floppy drive for this. I'm only 16 and do not have this kind of money. Why is serious software so expensive? And how can a company charge so much for a WP program? One package costs £180!

My dad said I should look through the PD and Shareware adverts. I did find a word processor for £2. What is the difference between the PD and full-price versions and do I need the more expensive program?

**Sarita Marsland
Manchester**

stf The first thing you're going to notice is the lack of any manual in the PD version – it's on the disk and you have to print it out yourself. If your demands on a word processor are only very limited then a PD version should easily suffice. If, on the other hand, you intend producing very large complex documents, a full-price version is worthwhile – but even here you can pay anything from £20 to over £200 for a commercial package and the differences are vast. We covered much of this topic back in issue 22 where we did a mammoth roundup of word processors. (If you haven't got a copy then turn to page 138 and see how you can get hold of a back issue.) Inevitably you get what you pay for.

The end is nigh!

With the cut in price of the STE and the start of the phasing out of the STFM, it seems to me that STFM owners are soon going to find themselves facing a far bigger problem than single-sided drive owners. As the proportion of STEs rises, software houses are going to start producing many STE-only programs. After a few years, the STFM will be regarded as obsolete (as single-sided drives are becoming now). Unless some manufacturer comes up with a miracle upgrade board, existing STFM owners like myself will have to sell their computers and

buy an STE – a decidedly expensive course of action. As far as I can see, the best thing for me to do is part-exchange my STFM for an STE while I can still get a good price for it and before people start realising they're out of date. Have you any suggestions?

**Adam Millard-Ball
Southsea**

stf Yes: wait. You're painting the future far blacker than it is, Adam. Atari themselves have stated their intention to establish the STE as the standard ST model (see the News story, page 6) but they admit that it's not going to happen for a year. In my opinion, that's more likely to be closer to two or three years – bearing in mind the vast number of STFMs already on the market. Consider this: STFM owners are only going to be ignored when the software houses start to write STE-only versions of games and that's unlikely to happen for a long while yet.

The release of an upgrade board which gives STE power to STFMs would speed up this process, but such a board is certain to emerge long before you need to think about selling your ST, and would make selling it unnecessary.

No joy with stick

For some time now I have been looking for an analogue joystick for the ST. Alas, it appears that nothing of the kind is available. I attended a computer show about a year ago where a salesman told me that a company was currently developing one. I have also enquired from several reputable dealers and the answer is always the same – "we've never heard of one."

One could argue that unless the market for an analogue joystick exists, then nobody is going to bother designing and manufacturing one. But I am sure other ST users must have asked the same question. And, after all, the design only has to emulate the output from a

mouse – an A to D converter! Maybe it is even possible to modify an IBM joystick for example. Having said all this, I may be wrong. There may be a gorgeous analogue joystick sitting around on a shelf somewhere with "Atari ST compatible" plastered all over the box. Please enlighten me.

**Martin Anthony
Ilford**

stf Because of the way the mouse port works, there's certainly no difficulty in attaching an analogue joystick to it. The new Gravis MouseStick (see review, page 87) is the only such stick so far. Unfortunately, it's that old chicken and egg situation. Manufacturers won't produce an analogue joystick to attach to the mouse port because games would need to be specially written to take advantage of it, while the game-programmers won't incorporate the code to read an analogue joystick because there aren't enough such sticks currently on the market.

On the STE, however, an analogue joystick port is standard – fitted deliberately to receive analogue input. Atari have said that developers are working on an analogue stick but that there still aren't any games to make use of it. That's sure to change now the sticks are appearing.

Virus? What virus!

I have been buying ST FORMAT for some time now and recently found that a number of your Cover Disks have viruses on them. These have damaged a number of my disks and this has annoyed me greatly. I would be very grateful if you could ensure that future Disks are free of viruses or have a virus detector on them.

**Derek Robertson
Coatbridge**

stf We have NEVER put a virus on our Cover Disk and never will. Each and every month we run the Disk through a rigorous virus-checking

W A N T E D

WE WANT YOUR HONEST OPINION OF **ST FORMAT** — SO WE CAN MAKE IT EVEN BETTER!

This questionnaire helps us monitor what you, our readers, think of **ST FORMAT** and so keep it tailored to your wishes. Please don't pass up this opportunity to influence the future of your magazine. We really do want to know your honest views!

1. Which ST do you own?

- ☐ 520ST ☐ 1040ST ☐ 520STE
☐ 1040STE ☐ Mega ☐ STACY

2. Which other computers do you own?

- ☐ Spectrum ☐ Amstrad CPC ☐ C-64
☐ BBC ☐ Amiga ☐ PC
☐ Archimedes ☐ Sega console ☐ Nintendo

3. How do you rate **ST FORMAT** in terms of value for money?

- ☐ Excellent value
☐ Good value
☐ Reasonable value
☐ Poor value
☐ Ripoff

4. How much does the cover of this issue appeal to you?...../10

5. How much does this issue appeal to you overall?...../10

6. How does it compare with previous issues you've seen?

- ☐ Much better
☐ Slightly better
☐ The same standard
☐ Slightly worse
☐ Much worse

7. Please rate out of ten this and any other computer magazines you read regularly:

ST FORMAT...../10
...../10
...../10
...../10

8. How interesting did you find this month's video feature?...../10

9. What is it you like most, and then least about this issue?

I most like.....

And I least like.....

■ You don't need a stamp in the UK. Simply return to: Reader Survey, **ST FORMAT**, Future Publishing Ltd, Freepost, Bath, Avon BA1 1XY

process – pushing it through the very best virus killers on the market to make absolutely certain there is no chance of an infection. When the Disk reaches our duplicators, it is tested by them, and before the full duplication commences we receive early sample copies of the Disk for checking. There's no way a virus could sneak onto your Disk – not before you get it.

A simple precaution to reduce the risk of infection is to ensure you always write-protect your Disk before using it for the first time. Simply move the write-protect notch in the top right-hand corner of the disk so that you can see through the hole. To clear up all the confusion about ST viruses, there is going to be a feature on the subject in a forthcoming issue.

Helpline is a rip-off

In your magazine you have a section called *Gamebusters* where readers send in tips on how to cheat games. Most of the cheats involve passwords or doing things in a set order. How do these readers find the passwords? Surely they don't type in every different word they can think of? Do programmers incorporate the cheats waiting for someone to find them?

It also seems to me that you cannot complete some games unless you find a cheat. Not only is it frustrating when you get stuck no matter how much you play, it is also a bit of a con because when you buy the game you expect a reasonable chance of completing it.

One final point: *Fantasy World Dizzy* gives an 0898 number to ring if you get stuck. I have tried to help my kids when they get stuck and after many hours have been unable to solve the

problem. Even so, I am loath to ring an 0898 number – I feel it's a rip-off, especially since this sort of game is aimed at young children who are bound to get stuck often. It appears the makers deliberately make the game impossible in an attempt to make more money out of the 0898 number – surely a practice to be frowned upon.

Ray Rigby
Cronton, Cheshire

stf Most game-players discover the cheats to games by examining the game's code. This involves taking some sort of disk editor and then examining the contents of the game disk for likely-looking words. If you know much about assembly programming you can look at the machine code and trace the flow of the program to discover the password. However, many simple passwords (like the way you can hit 4 in Klax to take you to level 100) are no doubt discovered entirely by accident.

Big software houses like US Gold, Mirrorsoft and Ocean provide a free helpline for their games. To offer such a service you need to have someone on call all day who knows each game inside out. This is an expensive service to provide, especially for a budget software house like Code Masters who produce the *Dizzy* series. It's not surprising then that they should choose to charge you for the service. **stf**

Bank on our sounds

After reading your article on the Yamaha PSS680/780 synthesizers, we thought you'd like to know about some programs we've written. These enable ST owners to save the mem-

ory contents of Yamaha PSS synths to disk. There are two programs: *PSSDUMP*, which works with the 480/580/680/780 synths, and *790DUMP*, which works with the PSS790 only. Both run on all STs up to TOS 1.6 and in medium or high resolution. They are Shareware and are available from the ST Club. You can also obtain them directly from me if you send a disk and two first class stamps, stating the version you require. In addition we'd like any PSS590 owners in need of a similar program to get in touch, because we need help from someone who actually owns one. You can write to me at: 24 Airedale, Hadrian Lodge West, Wallsend, Newcastle NE28 8TL.

Graham Galbraith
Newcastle

Double trouble

Can you tell me what the difference is between double-density disks and high-density disks? Are high-density disks suitable for the 520STE?

I Smitherman,
Bury St. Edmonds, Suffolk.

stf High-density disks can be formatted by special drives to store 144MBytes of data rather than the 720K that double-density disks can hold. High-density disks aren't as reliable as double-density disks because the disk needs to incorporate twice as many tracks. As far as the ST is concerned there is no difference, but standard ST floppy drives aren't capable of formatting to 144MBytes. You can buy a high-density drive for your ST – for more information contact the Silica Shop ☎ 081 309 1111. **stf**

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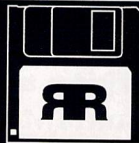
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**FAST TURNAROUND
COMPETITIVE PRICES**



The *ST* FORMAT JULY quiz

You could win one of three sizzling colour inkjet printers from Canon – if you can answer this month's 20 tortuous teasers

We received so many correct replies to last month's competition that we've decided to make this one *even harder* – but don't worry, we're giving you a bit longer this time to complete it.

Before you do anything else, before you even *think* about taking a look at these questions, flick back to the Contents page and make sure you've read every feature this issue. You need all the help you can get to complete this month's epic quiz!

1 Name Jeff Minter's loony graphics package, reviewed this month in *FORMAT*.

2 Which recently-released *FORMAT* Gold rated paint package also doubles as a good way to put animations onto your own videos?

3 What is the Roland D-110?

4 What package under review this month is supposed to be with you all the way through your formative years?

5 A rather spectacular quote appears in the manual of a

package under scrutiny this month. What package boastfully claims "you'll never need to read this manual again"?

6 Who is the author of *Alice's Adventures in Wonderland*?

7 What PD demo, reviewed this month, has something in common with the Bitmaps?

8 How many registered *ST* User Groups are there in the United States?

9 How many hotkey combinations can you have in the *HotWire* program?

10 What programming team are responsible for the development of *MidWinter 2*?

11 What device, reviewed this issue, would enhance your control of *F-19*?

12 What is the maximum amount of memory you can upgrade your *ST* to?

13 Using the *ST*'s Desktop, how many kilobytes are left free on this month's Cover Disk?

14 What type of printer works using tiny jets of ink?

15 What new software house is now going to be selling *Deuterios*?

16 Some *ST*s are called *STFs*, others are called *STFMs*. What does the *M* stand for?

17 The *STE* incorporates two new joystick ports on the side of the machine. What's so special about them?

18 What's the size (in pixels) of the *ST*'s screen in high-resolution mode?

19 Name a black and white digitiser which can digitise in real-time.

20 What device can you install or attach to your *ST* to make it act as if it's a totally different machine?

Find out all the answers in next month's issue. Winners will be announced in the September issue

THE RULES BOX

1. All entries to the competition must make it into the *ST FORMAT* offices by July 5th.
2. Employees of Canon or Future Publishing and their families are not eligible to enter.
3. Anyone who submits more than one entry to the competition is not only going to be banned, but you'll also learn how painful it can be to have tiny jets of ink squirted up your paper-feed.
4. No cash alternatives can be offered.
5. The Judge's decision is absolutely final, so we'll just keep all the tenners, thanks.

IN NEXT MONTH'S *ST* FORMAT – OUR BIGGEST EVER GUIDE TO PRINTERS,

WIN! WIN! WIN!



£1,200 worth of compact but powerful Canon Bubblejet printers are going for a song – well, a competition entry anyway!

In next month's issue we're doing the biggest round-up of printers yet. As a taster to that issue, we're offering you the chance to win one of three Canon inkjet printers, each worth £400.

The beauty of inkjet printers is the quality of the printout. Inkjets work by squirting very fine jets of ink at the sheet of paper (hence the name). Because there's no print head to slam into the paper, you can obtain very fine, crisp lines. The Canon Bubblejet has a print head with 64 jets, giving it a resolution of 360 dots per inch – comparable to the best laser printers on the market.

The *FORMAT* Gold winning Bubblejet from Canon (reviewed in *STF* 17) is a tiny inkjet printer, no more than a foot

wide and weighing just four pounds. It runs off the mains with its supplied power unit, and with an optional nickel-cadmium rechargeable powerpack you can use it as an entirely portable device!

The Bubblejet has everything you'd expect from a quality printer – proportional spacing, two character fonts and a range of character sizes.

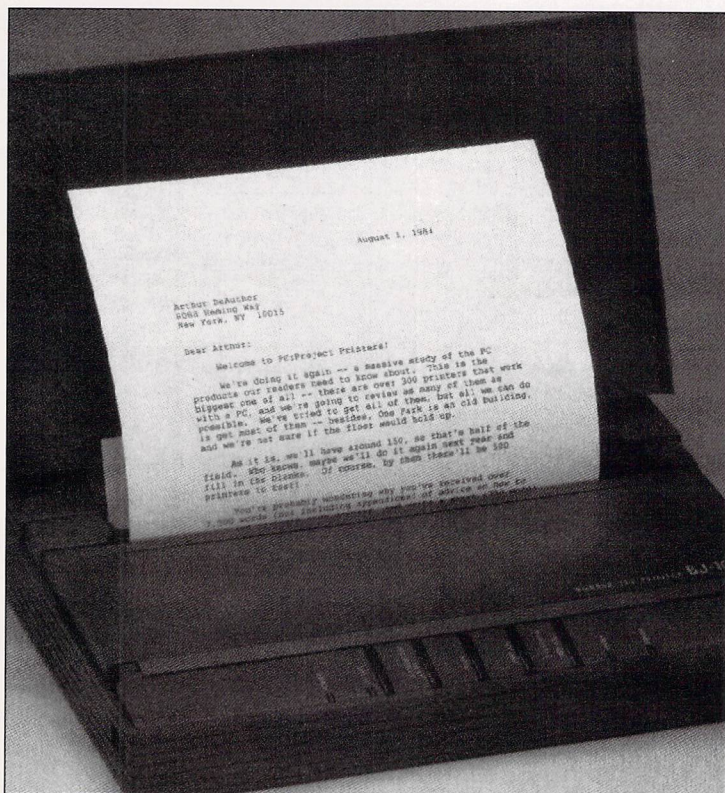
It is also very easy to maintain. The ink cartridges contain not only new ink but also the print head itself, so replacing them is just a case of lifting out one car-



■ The Canon BJ-10e Bubblejet printer is astonishingly compact and can be linked to an optional battery pack for totally portable use

tridge and inserting another. It's tomorrow's printer technology today – and all you need to do to win one is answer the questions opposite – simple, innit?

■ This tiny black box is actually the Canon Bubblejet printer, and we've got three up for grabs! It uses an uncommon printing method but it boasts outstanding output quality which can even rival that of laser printers



THE JUNE QUIZ

Your response to last month's mind-bending compo was overwhelming. But we're sure we've whittled down the number of entries we'll get this time. The correct answers were:

1. UBI Soft
2. *The Killing Game Show*
3. Yamaha MIDI keyboard
4. 16
5. Prestel
6. C-Lab's *Alpha Notator*
7. Any Bulletin Board
8. Bui-Tong Phong
9. 4,096
10. A4
11. Double-buffering
12. Assembly Line
13. 9,216 (or 11,264, using *DC Utils*)
14. Hidden Line Removal
15. Lyndon Baines Johnson
16. DMA port
17. America
18. At least 10 frames per second
19. "I've got the Power," released 1990
20. Genlock

LAST MONTH'S WINNERS

Pandaal A4 scanners with sheet-feeders go to: Richard Lockwood from Doncaster, and Alan Richardson from Dunfermline, Fife. Three hand-held Pandaal scanners were won by: Laura Young from Tonbridge, Kent, David Sykes from Halifax, and T R Bennett from Bridgnorth, Shropshire

PLUS MEMORY UPGRADES AND EMULATORS – OUT THURSDAY JULY 11TH

Twilight zone

It's all in the Twilight zone – scandal, weird stuff, leftovers that didn't fit...

Oscar Wilde Celebrity Review

Well, this month, luvvies, I've had a look at a football game called Wazza. Apparently this is inspired by a professional footballing chappie who plays for one of the more second rate sides.

The idea of the game is to leave the pitch before the game is completed. This can be done in two ways. First, you can have a crying fit at every one of the ref's decisions and get sent off to have some fluids pumped into your body. Second, you can fall down lame every time you come within ten feet of another player, and again, cry a lot – at least until the physio rubs your leggy-weggy better and carries you off on a stretcher. If you get really good at the game, you can even fail to go onto the pitch at all. This is a tricky manoeuvre, however, and takes minutes of practice.

I thoroughly enjoyed this game. I see it appealing mainly to football fans whose intelligence quotient has dropped by a few hundred points through repeated beastly kickings on the terraces.

OW Rating: 69%

Murphy's Column

■ Just when you see the light at the end of the tunnel, the roof caves in

■ When a compiler accepts a program without error on the first run, the program will not yield the desired output

■ Variables won't; constants aren't

■ Whatever you did, that's what you planned

■ One fifth of the people are against everything all the time

COMING NEXT MONTH

Next month's issue is just popping out of its 501s with features. You told us in your questionnaire returns that most of you intend to buy memory upgrades sometime in the year, so we're taking a close look at all the upgrades available. What can you do with them? Where do they go? And if you don't know what "populated" and "unpopulated" mean, we'll be asking the residents of the charming rural village of Copping Offbury.

Plus we've got the biggest roundup of printers ever. We're looking at dot matrix, inkjet, laser and colour printers, and we're making a foray into the baffling subject of printer drivers. We're also having a gander at the vast range of emulators which can transform your ST into a PC, a Macintosh – even a ZX81!

And whatever you do, don't miss our exclusive interview with Soul II Soul. We speak to Will Mowatt, co-writer of their third album, about the trials and tribulations of truly professional music writing on an ST.

All the regulars are there as well, including exclusive reviews of *Cruise for a Corpse* and *R-Type 2* – and we hope beyond hope that *MidWinter 2* is going to make it too, because our cleaner can't wait to drop mops and have a bash. So until *ST FORMAT* 25 hits the pavement on Thursday 11 July, remember to keep those Slinkies clean!

WANTED: keen techno freaks

We're aiming to print some helpful DIY projects in future issues, so if you're a competent writer with the technical know-how to design your own DIY circuit boards (such as input/output boards, external clocks, and so on), drop a line to: The Editor, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW

The *FORMAT* Letterhack of the month

Remember how we asked what you'd like to see in future issues of *FORMAT*? Well, we got a sudden flurry of cards wanting something on hacking, signed in different names – but all from the same person! The addresses were all different but the postmarks were all the same – and they all spelled it "Haking." Must be a big fan of the gadoid food fish of the genus Merluccius. Surely he can't imagine *FORMAT* would condone pirating in any of its malevolent forms?

Now this is getting ridiculous...

Still having trouble getting hold of *ST FORMAT*? One more time, then: it's the *FORMAT* guide to making sure you don't miss out.

If your newsagent doesn't have a copy of *FORMAT* on the shelf, try asking the person standing behind the counter. They might have some more hidden away. If that doesn't work, check one of the bigger newsagents, like WH Smith.

If you don't want to subscribe – and see page 138 for some good reasons why you should – fill in the form below and hand it to your newsagent. Every newsagent in the country – from John Menzies to the corner shop – will be delighted to reserve you a copy each month – or even deliver it to your door.

Still no luck? Then call the extremely helpful Kate Hodges on 0225 442244 and tell her which of Future's magazines you're after and where you've tried to get hold of it. She can sort out all of your problems in no time at all!

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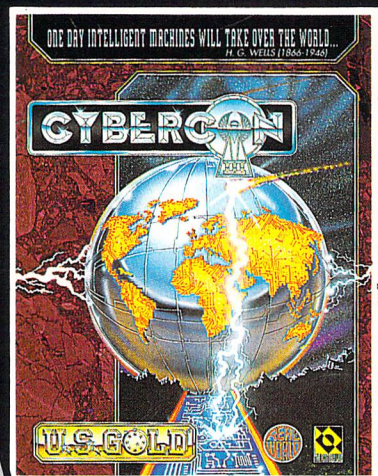
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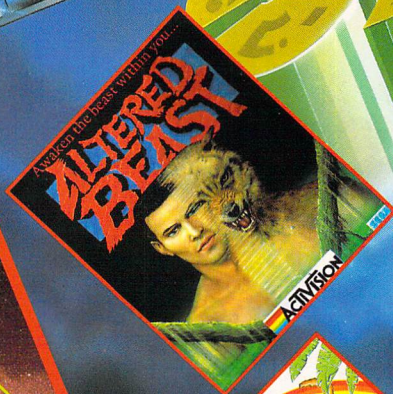
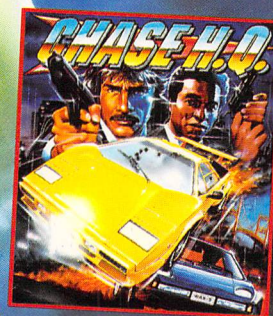
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